Community Wildfire Protection Plan
Lake County, Colorado
March 2006

http:// www.colostate.edu/depts/csfs/lakecocwpp.pdf

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Acknowledgements

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The CWPP Taskforce would also like to thank Dr. William Romme of Colorado State University for his interest, support and expertise throughout the CWPP process, and his review and suggestions related to the draft CWPP document.

This CWPP is a living document which the Taskforce hopes will be used to increase the safety of more Lake County neighborhoods in the future, as well as protect the many values these forests have to Lake County residents and Lake County visitors.

March 2, 2006
Leadville

Community Wildfire Protection Plan
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Acronyms and Abbreviations

BIA	Bureau of Indian Affairs
BLM	United States Department of Interior Bureau of Land Management
CAP	Community Assistance Program
CMC	Colorado Mountain College
CSFS	Colorado State Forest Service
CSU	Colorado State University
CWPP	Community Wildfire Protection Plan
DOI	Department of Interior
FEPP	Federal Excess Private Property
FWS	United States Fish and Wildlife Service
HFI	Healthy Forest Initiative
HFRA	Healthy Forest Restoration Act of 2003
MAP	Matching Awards Program
NEPA	National Environmental Policy Act
NFF	National Forest Foundation
NFP	National Fire Plan
NRMI	Natural Resource Management Institute (CMC)
UAVWMP	Upper Arkansas Valley Wildfire Management Plan
USFS	United States Forest Service
UXO	Unexploded ordnances
VFA	Volunteer Fire Assistance
WUI	Wildland Urban Interface

Chapter One: Introduction

a. Background

Lake County is a true gem in the State of Colorado, nestled at the northern tip of the Upper Arkansas Valley; it is the headwaters for the Arkansas River. The boundaries of Lake County are the Continental Divide to the west and the north and the ridgeline of the Mosquito Range to the east. A survey line one mile north of the division line between townships 11 & 12 makes up the southern boundary. The county is surrounded by Eagle, Summit, Park, Chaffee, Gunnison, and Pitkin counties. 74% of Lake County is comprised of federally owned land and 26% is comprised of state and private lands. Lake County has a variety of ecosystems ranging from expansive stands of lodgepole pine and open stands of ponderosa pine, to open fields of grassland and exposed hillsides of sagebrush. Lake County is home to 7,812 people of which only 2,821 live in the historic town of Leadville (the only incorporated town in Lake County) according to the 2000 US Census demographic profile. This means that 63% of the population lives in rural areas of the county and are potentially threatened by wildfires.

In 2002 the Lake County Forest Project was initiated, to explore the ecological aspects of our surrounding forests, including the role of fire, and any economic opportunities to the community related to these forests. In 2005, the CWPP (Community Wildfire Protection Plan) process was initiated. A CWPP Taskforce was assembled, and these members have been committed collaborators throughout the process:

Colorado State Forest Service
Leadville/Lake County Fire Rescue Department
Lake County Board of County Commissioners
City of Leadville
USDA Forest Service
Fred Allen – Resident
Jessica Clement – Resident

During the process, a number of neighborhoods (subdivisions and other types of Lake County residential entities) have become part of the CWPP process and have provided the Taskforce with the types of wildfire remediation work they would like to see on their private property and surrounding public lands. They have also indicated what they do not want disturbed, all of which is listed further in this draft plan. These neighborhoods were:

Beaver Lakes Estate
Elk Run
Home Stake Trout Club
Homestake Subdivision
Mountainview East
Piney Run
Twin Lakes

We thank all our collaborators and neighborhood contacts for their dedication to this effort.

b. Definition of Wildland-Urban Interface

According to the National Fire Plan (NFP) the definition of the wildland urban interface (WUI) is "the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Often incorrectly referred to as the "interzone" or "urban/wildland interface." (National Fire Plan, 2004) Another definition is "A geographical area, formerly wildland that now has structures, primarily homes, built in close proximity to naturally occurring flammable fuels. Term may also apply to program(s) designed to mitigate, prepare for, respond to, or recover from fires within this area" (UAVWMP, 1995).

The wildland urban interface is commonly described as the zone where structures and other features of human development meet and intermingle with undeveloped wildland or vegetative fuels. Communities within the WUI face substantial risk to life, property, and infrastructure. Wildland fire within the WUI is one of the most dangerous and complicated situations firefighters face. Both the National Fire Plan), and the Western Governors' Association (2002), place a priority on working collaboratively with communities in the WUI to reduce their risk from large-scale wildfire (SAF, 2004).

Depending on local forest conditions, the WUI zone is a geographical area that provides opportunities to reduce fire risks and create defensible space through vegetation treatments on private and surrounding public lands. When reducing fire risks, vegetation treatments can be conducted in a zone that helps to reduce fire risks and creates a defensible space that will allow fire crews and equipment to effectively protect structures or communities. To allow for adequate safety treatments and defensible space, both the Healthy Forest Restoration Act of 2003 (HFRA) and forest ecologists have stipulated a maximum WUI treatment area of 800 meters or half a mile (HFRA, 2003, Aplet and Wilmer, 2003, Wilmer et al., 2005). Within this half mile, treatments may be conducted such as controlled surface fires, thinning or patch cuts, depending on what is most appropriate for the vegetation type, and the preferences of the particular neighborhood. The WUI definition can also include: "an area within 1/2 miles of the boundary of a community that (I) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community; (II) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or (III) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis." (SAF, 2004). The residents, in collaboration with the CWPP Taskforce, have designed treatments within these definitions. In this CWPP, most of the surrounding WUI area is characterized by lodgepole pine, some by ponderosa/pine or a ponderosa pine mix, and sagebrush. Each of these vegetation types have a different fire regime (explained below) and treatments are designed to work in concert with these fire regimes, as well as residents' forest values.

For full ecological information regarding all vegetation types in Lake County, please refer to Appendix A.

c. Fire regime and Condition Class

The fire regime concept is used to characterize the personality of a fire in a given vegetation type – how often it visits the landscape, the type of pattern created, and the ecological effects.

Federal lands within the WUI were evaluated for fire regime. A natural fire regime is a general classification of the role a fire would play across a landscape in the absence of human intervention. Five categories of natural (historic) fire regimes were created based on the number of years between fires (fire frequency) combined with the severity of fire on dominant overstory vegetation (Schmidt, Menakis, Hardy, Hann and Bunnell, 2002). Lake County CWPP WUI lands are composed of multiple natural fire regimes. See the table below for a description of the fire regimes and example of areas associated with them.

Table 1: Historical Natural Fire Regimes

Fire Regime	Frequency (years)	Severity	Example of Areas in Lake County
I	0 – 35	Surface & mixed	Twin Lakes
II	0 – 35	Replacement	Beaver Lake Estates
III	35 – 100+	Surface & mixed	Twin Lakes, Hayden Meadow
IV	35 – 100+	Replacement	Leadville and surrounding area, Sylvan Lakes Subdivision, Outward Bound
V	200+	Replacement, mixed & surface	Higher elevations (starting at approximately 10, 500 ft) throughout Lake County

No fire history studies have been conducted in Lake County and the above table represents generalizations at a national scale and do not take in the local variability of this particular area. The table serves as a general indicator of possible existing fire regime condition classes on a national scale (Fire Regime Condition Classes, 2006). The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes

Fire Regime Condition Class is an interagency classification system to determine the extent of departure from the natural fire regime. For example, a forest in condition class 1 is a forest system within its natural fire range and at low risk for losing ecosystems components from wildland fire. A forest in condition class 2, is a forest that has moderately departed from its historic fire occurrence range and has a moderate risk of losing habitat components. A condition class 3 forest has significantly departed from its historic fire regime range, and the risk of losing key habitat components is high. Currently a condition class rating has not been completed for Lake County. Refer to Chapter three.

d. Relevant Fire Policies

i. Federal Policies

Several federal wildfire policies have been developed within recent years, the most prominent being the National Fire Plan(NFP) (Wildland Fire Leadership Council, 2004). The NFP

incorporates *A Collaborative Approach for Reducing Wildland Fire Risk to Communities and the Environment, 10-Year Comprehensive Strategy*, whose primary goals are to:

- improve prevention and suppression,
- reduce hazardous fuels,
- restore fire-adapted ecosystems, and
- promote community assistance.

Federal wildfire policy is planned and administrated through the Pike & San Isabel National Forests, Bureau of Land Management Royal Gorge Field Office and U S Fish and Wildlife Service, Leadville National Fish Hatchery, which are the governing agencies for the federal lands associated with the CWPP planning area in Lake County.

As part of the FY 2001 Appropriations Act for the Department of Interior and Related Agencies, Congress required federal land management agencies to identify communities that are at high risk from wildfire. The following communities in Lake County were list in the Federal Register, Volume 66, Number 3:

Balltown, CO	Climax, CO
Leadville, CO	Malta, CO
Twin Lakes, CO	

Other "tools" that assist federal hazardous fuel reduction efforts include the Healthy Forest Initiative (HFI) and the Health Forest Restoration Act (HFRA). Both tools assist federal land managers in working collaboratively with local communities and completing required environmental assessments within a timely fashion.
Firewise™ is a national program that helps communities reduce the risk of wildfires and provides them with information about organizing to protect themselves against large wildfires and mitigating losses from such fires.

ii. State Policies

The Community Wildfire Protection Plan, as described in the Healthy Forest Restoration Act, brings together diverse local interests to discuss their mutual concerns for public safety, community sustainability and natural resources. It offers a positive, solution-oriented environment in which to address challenges such as: local firefighting capability, the need for defensible space around homes and subdivisions, and where and how to prioritize land management – on both federal and non-federal land.

Lake County and the State of Colorado have an Agreement for Wildfire Protection. In the agreement Lake County and the State of Colorado agree to work together in the following areas of wildfire protection: planning, organizing, equipping, training, suppression, prevention, detection/notification, reporting and prescribed burning.

<u>Recent Colorado State Legislation</u>

- HB 1001 Triples damages in civil lawsuits against those starting a wildfire and gives the State Forester to authority to give written permission for prescribed burns.
- HB 1006 Strengthens criminal penalties for starting a wildfire, gives the State Forester authority to give written permission for prescribed burns, and provides municipalities with the power to control and limit fires.
- HB 1018 Allows counties to ban the sale and use of fireworks during fire bans.
- HB 1025 Creates a wildfire emergency fund that will pay for an initial air drop during local initial attack.
- SB 7 Protects homeowners near wildfires from undue insurance cancellations.
- SB 12 Enhances the penalty for throwing burning objects (e.g. cigarettes) out of a moving vehicle.

iii. Local Policies

Local policies include the Lake County Land Development Code and the 2003 International Fire Code, as adopted by both the City of Leadville and the County Lake.

Under section 6.9.1, all development must comply with applicable fire safety regulations adopted by the Lake County Board of Commissioners.

Other relevant sections of the Lake County Land Development Code include (as paraphrased below):

Section 6.9.3: Centralized water treatment and supply systems shall meet fire supply needs to the satisfaction of the applicable firefighting agency.

Section 6.9.3: The Board of County Commissioners may require proposed developments to include fire lanes where the forested portion of a proposed development joins or parallels Nation Forest boundaries.

Section 6.9.4: Fire hydrants shall be required in all developments services by a centralized water treatment and distribution system.

Section 6.9.5: Where fire hydrants are not required in a proposed development, the Board of County Commissioners may require that a developer provide alternative fire protection systems.

Additionally, the Lake County Development Code provides for zoning districts, by which certain types of development must meet zoning requirements, which may include lot size requirements (thereby manage density) and activity restrictions (thereby managing concentration of risk). In similar fashion, the development code also establishes overlay zones, which provide for additional management of proposed land use activities.

The 2003 International Fire Code, as adopted by the Lake County Board of Commissioners, does not include amendments or appendices B, C or D. These appendices provide for additional fire-flow, fire hydrant and road requirements designed to improve fire protection. The 2003 International Fire Code, as adopted by the City of Leadville does include amendments or appendices B, C and D.

e. Grants

For more information regarding the grants below or matching programs, please visit http://www.rockymountainwildlandfire.info/grants.htm or call the Colorado State Forest Service 719 – 539 2579.

CWPP Matching programs/grants:

Colorado Wildland Urban Interface Grants

Funds may be made available annually under the National Fire Plan specifically for projects that address and mitigate wildfire hazard in the wildland urban interface. Five focus areas are eligible for funding: assessment, planning, information/education, hazardous fuels reduction, and monitoring.

National Forest Foundation Grant Programs

The National Forest Foundation (NFF), a private, nonprofit conservation partner of the USDA Forest Service, promotes the health and public enjoyment of the National Forest System through grant programs that facilitate local involvement and encourage grassroots participation in forest stewardship. NFF's grant programs include the Matching Awards Program (MAP) and the Community Assistance Program (CAP). MAP's areas of interest – community-based forestry, watershed health & restoration, wildlife habitat improvement, and recreation – are action-oriented projects that enhance the viability of natural resources while considering benefits to, and the involvement of, surrounding communities. In 2005, MAP will concentrate its efforts in five geographic areas: Southern Appalachians (TN, NC, SC, and GA), Oregon Coast and Central Cascades, the Selway-Bitterroot (MT, ID), Central Colorado Rockies, and Central Sierra (CA).). Approximately 80 percent of available funds will be allocated to projects within these five geographic priority areas. The remaining 20 percent is available for projects outside the areas. CAP provides small grants and start-up funds from $5,000 to $15,000 for newly-forming collaborative organizations. Funds may be used for a variety of needs including basic start-up and operating costs, materials and equipment, technical assistance, training, community outreach, obtaining 501(c)(3) status, program development, nonprofit management skill-building, and communications.

Soil and Water Conservation Society Grant

The objectives of the Foundation are to advocate the protection, enhancement, and wise use of soil, water, and related natural resources to ensure that present and future generation live in a sustainable environment. The Soil and Water Conservation Society fosters the science and the art of soil, water and related natural resource management to achieve sustainability. We promote and practice an ethic recognizing the interdependence of people and the environment.

Sustainable Forests and Community Initiative

The mission of the Sustainable Forests and Communities Initiative is to promote forest conservation and environmentally sustainable economic development, along with community building, at the local level. The Family Foundation supports programs of national and international significance that promote the welfare of human and natural resources. These efforts will enhance the

creativity; strengths and skills already possessed by those in need and reinforce the sustaining processes inherent in nature.

Wildfire Mitigation/Prevention/Suppression Matching programs/grants:

Colorado Wildland Urban Interface Grants

Funds may be made available annually under the National Fire Plan specifically for projects that address and mitigate wildfire hazard in the wildland urban interface. Five focus areas are eligible for funding: assessment, planning, information/education, hazardous fuels reduction, and monitoring.

Colorado Wood Utilization & Marketing Program

The Colorado Wood Utilization and Marketing Program (CO Wood) exists to support and expand Colorado's forest-based business sectors and consumers of wood products by providing technical assistance, applied research, education and extension assistance, industry advocacy, and promotion.

Community Facilities Grant Program

The Community Facilities Grant Program provides assistance for rural areas & towns up to populations of 20,000 to construct, enlarge, or improve essential community facilities. Grants can be used for real estate and equipment such as fire stations and fire trucks.

El Pomar Wildland Fire Fund

El Pomar Foundation's 2005 Wildland Fire Fund supports efforts by volunteer fire agencies to purchase vehicles and vehicle accessories used to fight wildland fires. This program is designed to assist with the local fundraising necessary to acquire major capital items. El Pomar will consider grant proposals up to $15,000

Federal Excess Personal Property (FEPP) Program

This program makes long-term loans of USFS equipment to local fire departments through the State Forest Service for use in fire fighting as well as mitigation and rehabilitation. There is no match required, but the equipment must be used for legitimate fire purposes. The "personal" part of the FEPP program simply refers to any tangible property that is not real estate. This can include trucks, aircraft, personal protective equipment, motor oil, nuts, bolts, fire hose, et cetera, but not buildings. Approximately 70% of the property involved in the Forest Service FEPP program is sub-loaned to local fire departments.

GreenWorks!

The Greenworks! grant program promotes environmental community action and service-learning projects, and enables students to pursue community projects in fire management, wildfire, and other general environmental issues. This program provides small mini-grants for environmental education projects to educators who have completed a Project Learning Tree (PLT) workshop. It is the

community action/service-learning component of PLT, a nationwide environmental curriculum program designed for students from pre-kindergarten through 12th grade.

National Forest Foundation Grant Programs

See description above

Rural Fire Assistance (RFA)

The Rural Fire Assistance (RFA) grant program is designed to support the fire protection capabilities of rural and volunteer fire departments (population or 10,000 or less) that typically fight fires near or on Department of the Interior (DOI) lands. Funding will be used to provide technical assistance, training, supplies, equipment and public education support to rural fire departments, thus enhancing firefighter safety and strengthening wildland fire protection capabilities. DOI lands are administered by one of the following four agencies: Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), U.S. Fish and Wildlife Service (FWS) and the National Park Service (NPS).

Small Business Innovation Research: Forests and Related Resources

This Small Business Innovation Research (SBIR) program develops environmentally sound techniques that: increase utilization of forestland materials and resources, and productivity of these forests; improve tree pathogen and insect control techniques; reduce ecological damage from forest operations; reduce wildfire risk; and improve wildfire control. Projects may also develop new products or technologies to increase the use of wood. The Cooperative State Research, Education and Extension Service (CSREES) program exists in three phases. The purpose of Phase I is to prove the scientific or technical feasibility of the proposed research and development effort. Phase II is the principal research and development effort. Phase III is the commercialization phase and there is no SBIR support provided for this phase.

State Fire Assistance

The State Fire Assistance (SFA) program objectives are to maintain and improve protection efficiency and effectiveness on non-Federal lands through training, equipment, preparedness, prevention and education. The program provides support directly to state forest fire protection organizations to enhance the firefighting capacity of state, local and rural organizations. There are three areas of emphasis: Preparedness, Hazard Mitigation and Fire Prevention.

Tums Firefighter Grant-in-Aid Program

The Tums Firefighter Grant-in-Aid program was designed to help provide fire departments with the most up-to-date firefighting equipment. With thousands of fire departments across the country struggling on shoestring budgets and lacking adequate protective clothing, breathing apparatus and up-to-date equipment, TUMS is proud to help fire departments. TUMS, America's first response to heartburn, is now supporting America's first responders to fire and local emergencies through the First Responder Institute (FRI). First Responder Institute, Inc. is a not-for-profit organization whose goal is to support local U.S. fire departments as well as emergency service personnel.

Volunteer Fire Assistance (VFA)

The Volunteer Fire Assistance program provides technical, financial, and other assistance to State Foresters and other appropriate officials to organize, train and equip rural and volunteer fire departments in rural communities (with populations of 10,000 or less) to prevent and suppress fires. This 10,000 population limit for participation in the VFA Program facilitates distribution of available VFA funding to the neediest fire departments. These funds can be used to improve communication capabilities, provide critical wildland fire management training, and purchase protective fire clothing and equipment.

f. Need for the Community Wildfire Protection Plan

Approximately 74% of Lake County is federally owned. HFRA provides for community based decision making and empowers local governments to determine the boundaries of the WUI that surrounds their communities. As will be described below, Lake County benefits of a diversity of vegetation types. Each vegetation type has a different fire regime, i.e. each forest, shrub or grassland has a different relationship with fire, which in turn helps determine what treatments are most effective in safeguarding communities and property, as well as determining what treatments are ecologically most appropriate, and therefore most effective from a safety perspective. Besides ecological and infrastructure knowledge, however, residents' own relationship with forests and the community can be included through this process. Thus, in collaboration with land management and other agencies, Lake County neighborhoods have the opportunity to become better acquainted with their surrounding forests, as well as the appropriate treatments that benefit forest and community, and also to help determine any further course of action.

Thus HFRA allows communities to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on nonfederal lands, including private residences. The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects and it places priority on treatment areas identified by communities themselves in a CWPP.

g. Planning Process

Early in 2004 a number of community members, the USFS, CSFS and the Leadville/Lake County Fire Rescue Department (LLCFRD) came together several times to explore possibilities and methods for engaging the community in a Community Wildfire Protection Plan process. Funding was already available through a Rural Community Assistance Grant, which had been obtained with the assistance of Rick Newton and Bob Dettman of the USFS, Cathy Patti of the Natural Resource Management Institute (NRMI) at CMC, and Jessica Clement, resident and research assistant at CSU. Any CWPP accomplishments conducted under this grant needed to be completed by January 31, 2006. A public meeting was held in June 2005 where participants determined the members of the CWPP Taskforce, and additional members of the community asked to be included in Taskforce deliberations. A follow-up meeting was held in July, attended by a number of Colorado State Forest Service staff who have been involved in CWPP developments around the state. Discussions then, and at previous meetings included:

What is a healthy forest in Lake County?
What is a community?
Who should be included in a collaborative process such as this?
What format should collaboration in this case follow?
What are our goals?
What can a CWPP achieve for the community, what not?
What is the role of science?

Principles

At the June public meeting and the July Taskforce meeting, collaboration principles were outlined on the basis of these discussions.

1. Collaborative Learning (Daniels and Walker 2001), would be embraced. During collaboration, if there is a willingness to hear and use all opinions and values, there is a real opportunity for communities to learn about local ecological conditions, larger ecological concepts, institutional cultures, institutional decision-making space, community history, the values of participants in the process and the reasons for those values, etc. All this can allow for an increase in trust and understanding, in turn creating more efficient and efficacious relationships and solutions that have a real chance of working in that particular community. This principle has so far proved that although participants and collaborators in this process may not always agree on everything, enough common ground was found to allow members to work together, and to discover solutions that have a chance of acceptance in the community.

2. Science is a key Consideration. As a result of new advances in science, and new natural resource management policies, forests are being considered from a "health" perspective, which finds large support among the general public. However, what a "healthy forest" looks like is based to a large extent on the interpretation of science. Although these interpretations may not always coincide among collaborators, it was decided that where there is a common understanding regarding scientific understanding, it would be presented to the public. Where there were different interpretations of scientific evidence, these different interpretations would be presented to all publics, allowing the community to use its best judgment. This principle has allowed science to remain an important component of the CWPP process, while allowing all interpretations to be presented in a productive manner. The presentation that was used in public meetings and neighborhood meetings is in Appendix A.

3. Transparency is key. The process needed to be open to all interested individuals and parties on all occasions, allowing for all values and opinions to be brought to the table. It is understood that although a transparent collaborative process may be more work at the front end, it also allows for a CWPP that has the most chance of finding community agreement and support, in turn providing real benefits to forests and communities.

4. Participation in this CWPP process is completely voluntary. No neighborhood is obligated to participate in this process. As a whole, the process is supported on a county-wide basis by many local, state and federal organizations and local residents, but the final decision to participant is up to individual neighborhoods.

5. Lake County as a whole is considered "the community". However, our community consists of different neighborhoods or areas, and those neighborhoods and areas are valued by those residents for a number of unique geographical, social and ecological reasons that can only be articulated by those residents. In order to increase sensitivity to those unique attributes, the CWPP process is designed for the entire community of Lake County, and its approach of eliciting participation and input is on an area by area, or neighborhood by neighborhood, basis.

Process Continued

In August, the Taskforce invited the community to a CWPP Science and Information Workshop, to which a number of neighborhood representatives (subdivision or particular section of Lake County, see below) came, as well as County Commissioner Ken Olsen. Lisa Corbin and Jessica Clement presented information regarding ecological considerations of lodgepole pine forests and other vegetation types. Karl Bauer and Jonathan Bradley presented information regarding wildland fire fighting considerations.

During a working lunch, participants reviewed GIS maps supplied by the USFS regarding subdivisions and neighborhoods in Lake County to assess areas of potential risk. First, considerations were identified which were used to determine whether an area was potentially at risk of being heavily impacted due to a large wildfire event. The following considerations were agreed to by all the participants to determine potential risk areas:

1. Road Access
    a. Ability for all people to leave.
    b. Ability for all truck types to be able to enter and maneuver.
    c. Proximity to Leadville.
2. Fuel Considerations – either due to stands of lodgepole pine being in close vicinity, or due to untreated, dense ponderosa pine stands.
3. Topography – e.g. the presence of a narrowing canyon.
4. Potential for Human Ignitions – either due to residential or visiting recreationists' activities.
5. Water Supply – accessibility for draft stations.
6. Population and/or resident density – a density of population and/or residential housing may create increased risk.
7. Communications and Notifications – Ability of residents to receive warnings.

The group then agreed on the following areas of potential risk using the above considerations list. Numbers identify which considerations were considered to apply to that area:

1. San Juan Placer area (which affects Ridgeview, Gem Valley and Homestake) (1a & b, 2, 4*, 6, 7.)
2. Elk Run near Lodgepole Flats (2, 4*, 5, 7.)
3. Village of Twin Lakes/Gordon Acres (1a,b,c, 2, 4*, 6, 7).
4. Beaver Lakes Estates #2 (1a,b,c, 2, 3, 4, 5, 6, 7).
5. Turquoise Lake Estates (2,3,6).
6. Sylvan Lakes (1a, b, 2, 3, 4, 6, 7 and UXO's).
7. Home Stake Trout Club (1a, b, 2, 4*, 6, 7 and UXO's).
8. Mountain View East Mobile Home Park (2, 4*, 6, 7).
9. Piney Run (1a,b, 2, 4, 5, 6, 7 and UXO's).

10. Twin Lakes Canyon Estates (1c, 2, 4, 5, 6).
11. PanArk (1a, b, c, 2, 3, 4*, 5, 6).
12. E.E. Hill (1a, b, c, 2, 3, 4*, 5, 6).

Seven of these HOA's/subdivisions/neighborhoods were approached in ensuing months by the CWPP Taskforce to discuss:

a. whether residents in that area agree they are living in a high wildfire risk area,
b. what mitigation they would favor, if any,
c. how and where those treatments should take place,
d. areas that residents prefer untouched.

The results of these discussions are included in this CWPP draft, with hopes that mitigations can be executed with funding through the Colorado State Forest Service, for which an application has been submitted by the CWPP Taskforce. The draft CWPP was presented at a public hearing on January 21st, 2006, 9 am in the Auditorium in the National Mining Hall of Fame. An overview of the CWPP process and results will be presented, with neighborhood maps for participants to review.

Chapter Two: Wildland-Urban Interface and Community Description

a. Wildland-Urban Interface Delineation Process

The Wildland Urban interface was earlier described as a geographical area, formerly wildland, that now has structures, primarily homes, built in close proximity to naturally occurring flammable fuels. Term may also apply to program(s) designed to mitigate, prepare for, respond to, or recover from fires within this area. Population dispersion in the U.S. has resulted in rapid development in the outlying fringe of metropolitan areas and in rural areas with attractive recreational and aesthetic amenities, especially forests. This demographic change is increasing the size of the wildland-urban interface (WUI), defined as the area where structures and other human development meet or intermingle with undeveloped wildland. The expansion of the WUI in recent decades has significant implications for wildfire management and impact. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. Its expansion has increased the likelihood that wildfires will threaten structures and people (University of Wisconsin, 2006). The US Forest Service and other federal land management agencies use the Healthy Forests Restoration Act of 2002 guideline of a ½ mile width next to private property lines to create fuels breaks that help to redirect fire away from WUI. Communities that are interested in fuelbreaks wider than ½ mile must indicate that preference in the writing to the managing agency.

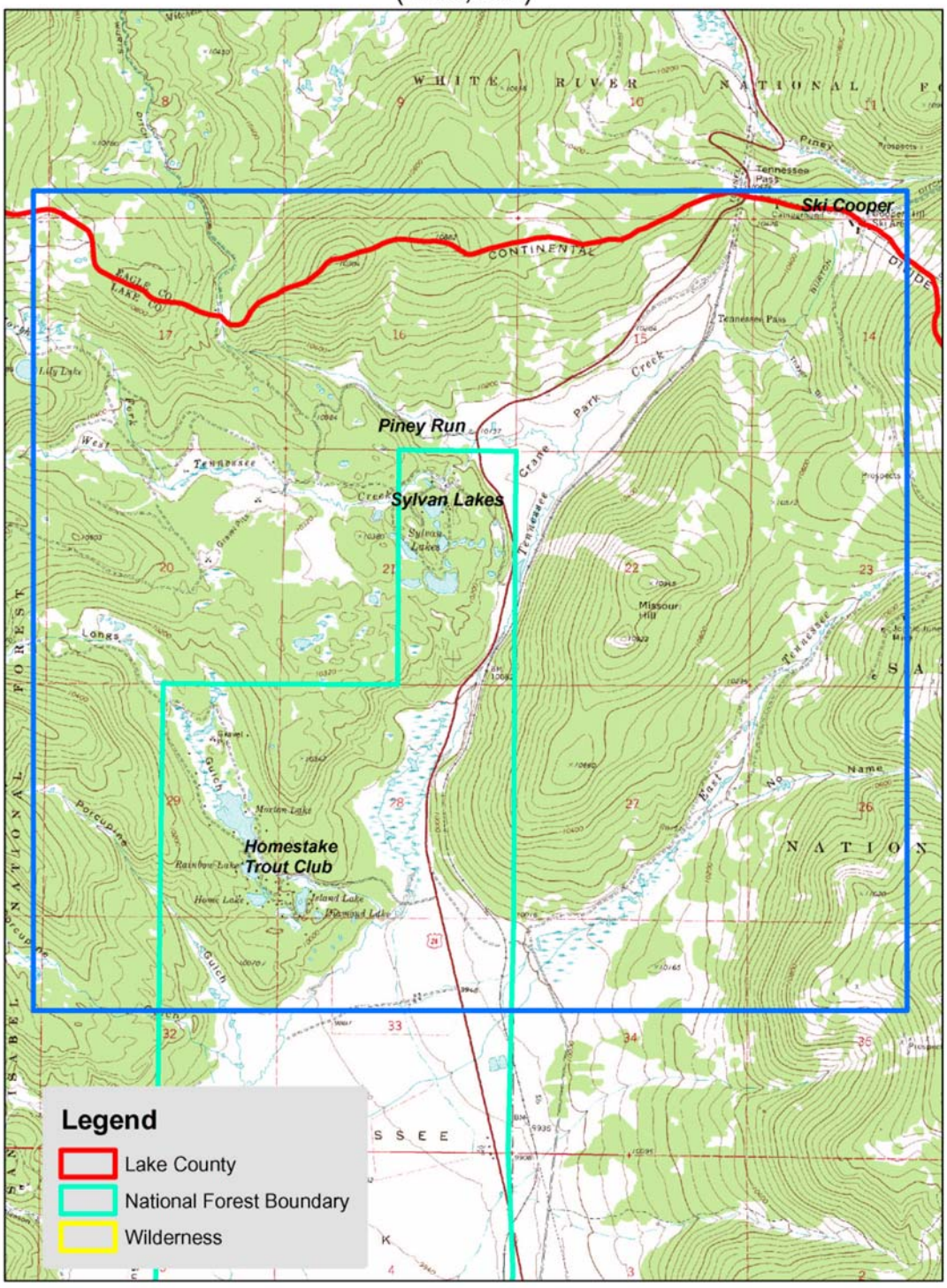
During the planning process, the CWPP Taskforce worked with interested members of the community to discuss what makes some WUI areas more susceptible to wildfire than others (see above). The parameters used to define those areas were Road Access, Fuel Type (vegetation type), Topography, Potential for Human Ignitions, Water Supply, Population Density, and Communications & Notifications. More information regarding the WUI areas and how Lake County was divided into zones will be discussed in the next section.

b. Community Description

For the purpose of the Community Wildfire Protection Plan, Lake County was divided into eight areas that share similar traits, such as response times for fire personnel, fuel types, and proximity to one another. This organization does not encompass all geographical areas, but the opportunity may exist in the future to address other areas, if funding is granted. Each area below contains the following neighborhoods:

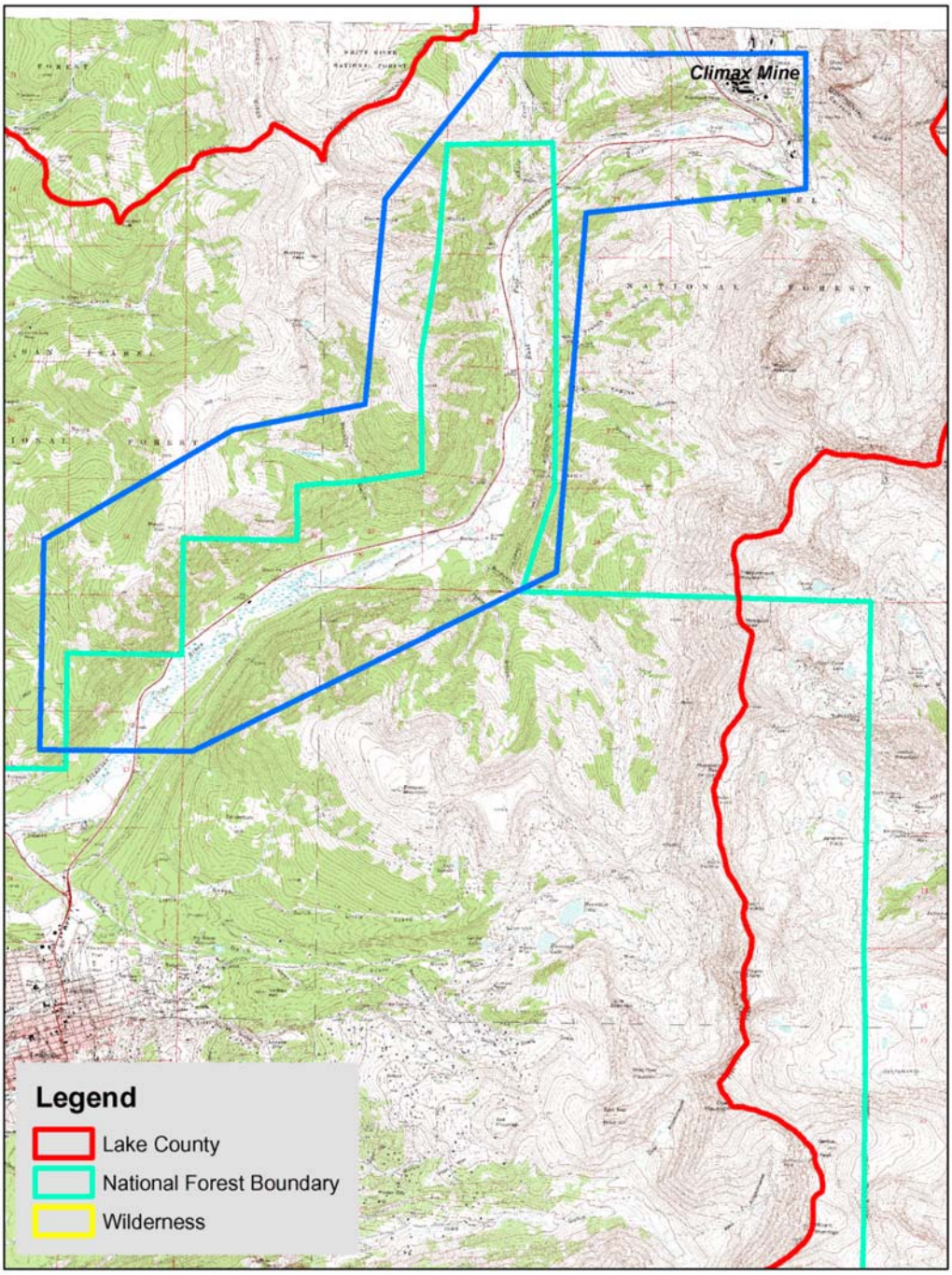
Northwest Leadville: Sylvan Lakes Subdivison, Homestake Trout Club, Piney Run, Ski Cooper

Map 2.1 Northwest Leadville
(1:35,000)



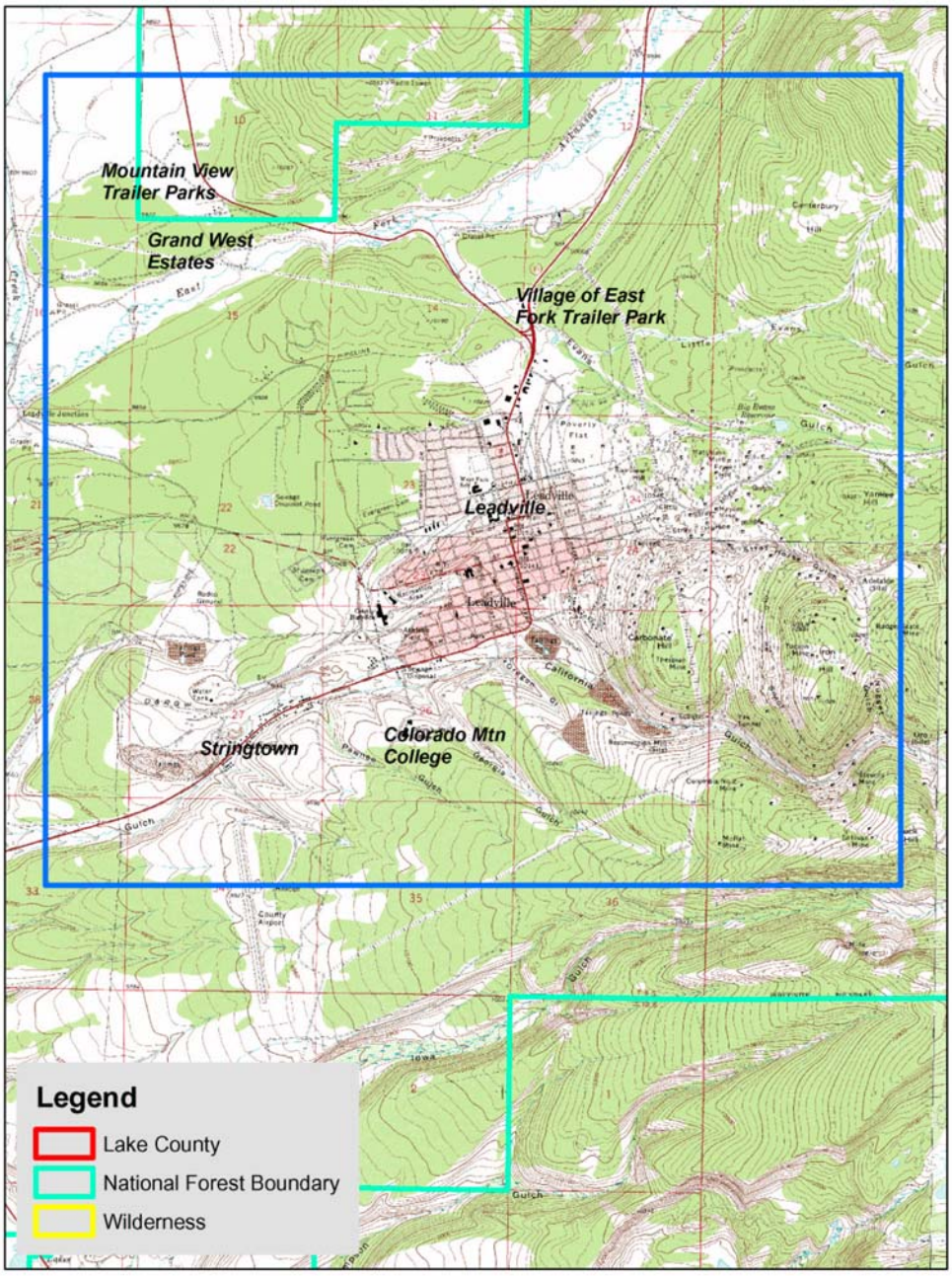
Northeast Leadville: Individual homes along the Hwy 91 corridor, Climax mine.

Map 2.2 Northeast Leadville
(1:75,000)



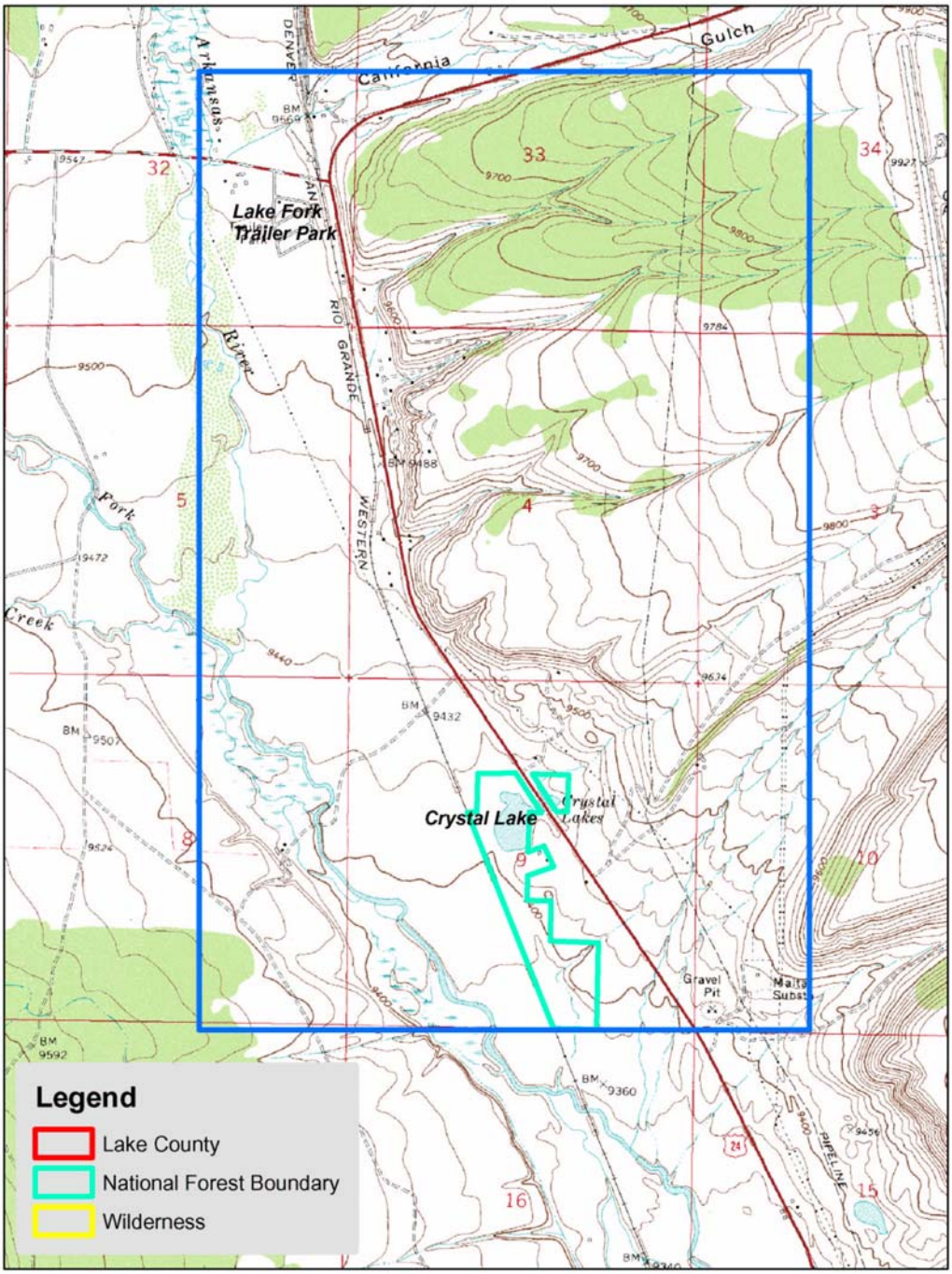
Leadville: Mountain Pines Ranch, Turquoise Lake Estates, Silver Hills, Four Season Estates, Matchless Estates, Gem Valley Subdivision, Homestake Subdivision, Brooklyn Heights, Colorado Mountain College, Westpark. Stringtown, Mountain View Trailer Park West, Mountain View Trailer Park East, San Isabel Trailer Park, Grand West Estates, Village of East Fork Trailer Park, College Park Subdivision, Jacktown, Edmonds Terrace, C. S. Placer, Sun West

Map 2.3 - Leadville
(1:45,000)



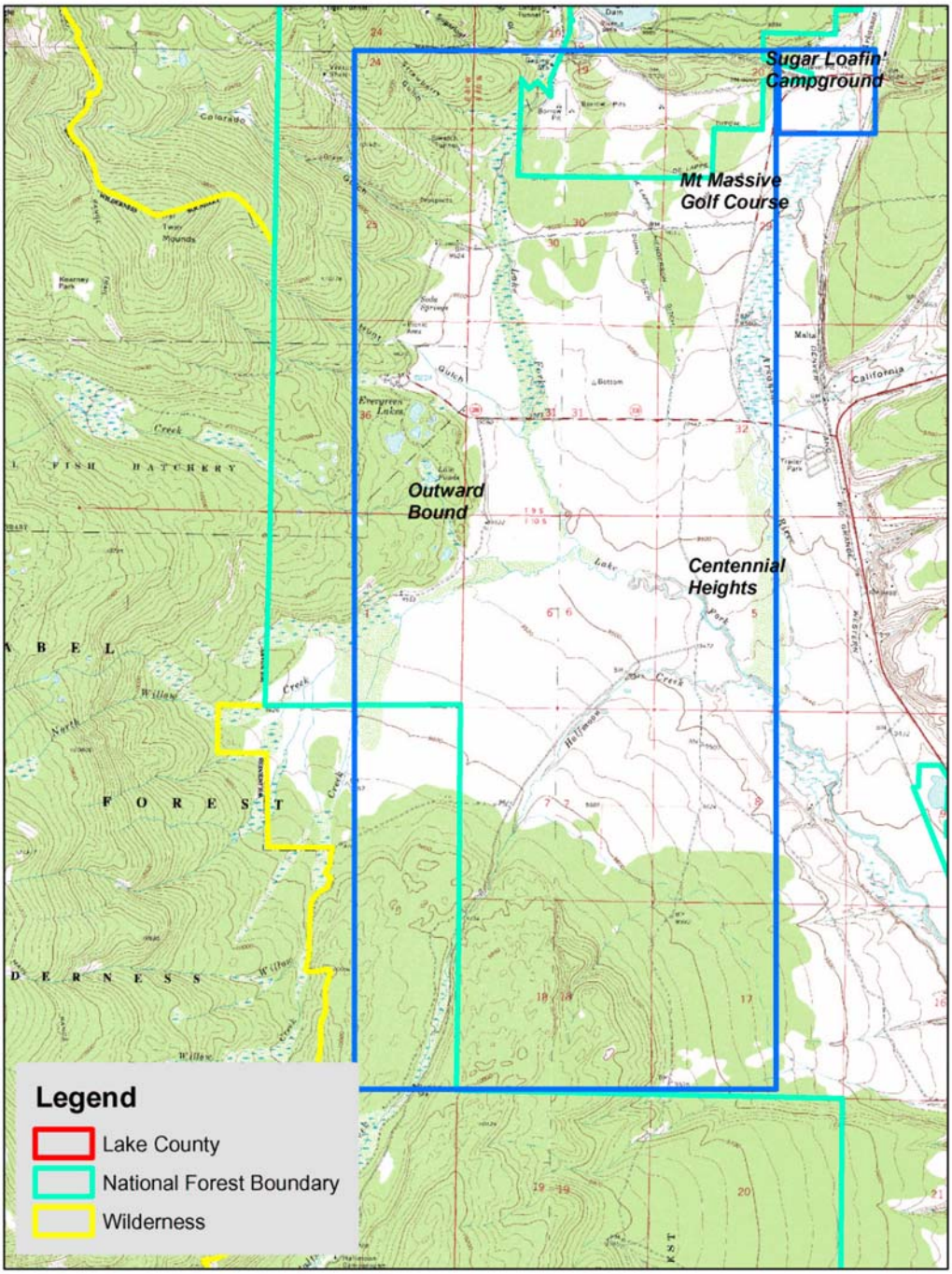
South Leadville: Individual homes located along Hwy 24 from Colorado Hwy 300 to County Road 7., , Lake Fork Trailer Park, Mt. Elbert Trailer Park, Crystal Lake, Dowlen Tract Plat, Kochevar Ranch Development, Dawson Estates

Map 2.4 - South Leadville
(1:25,000)



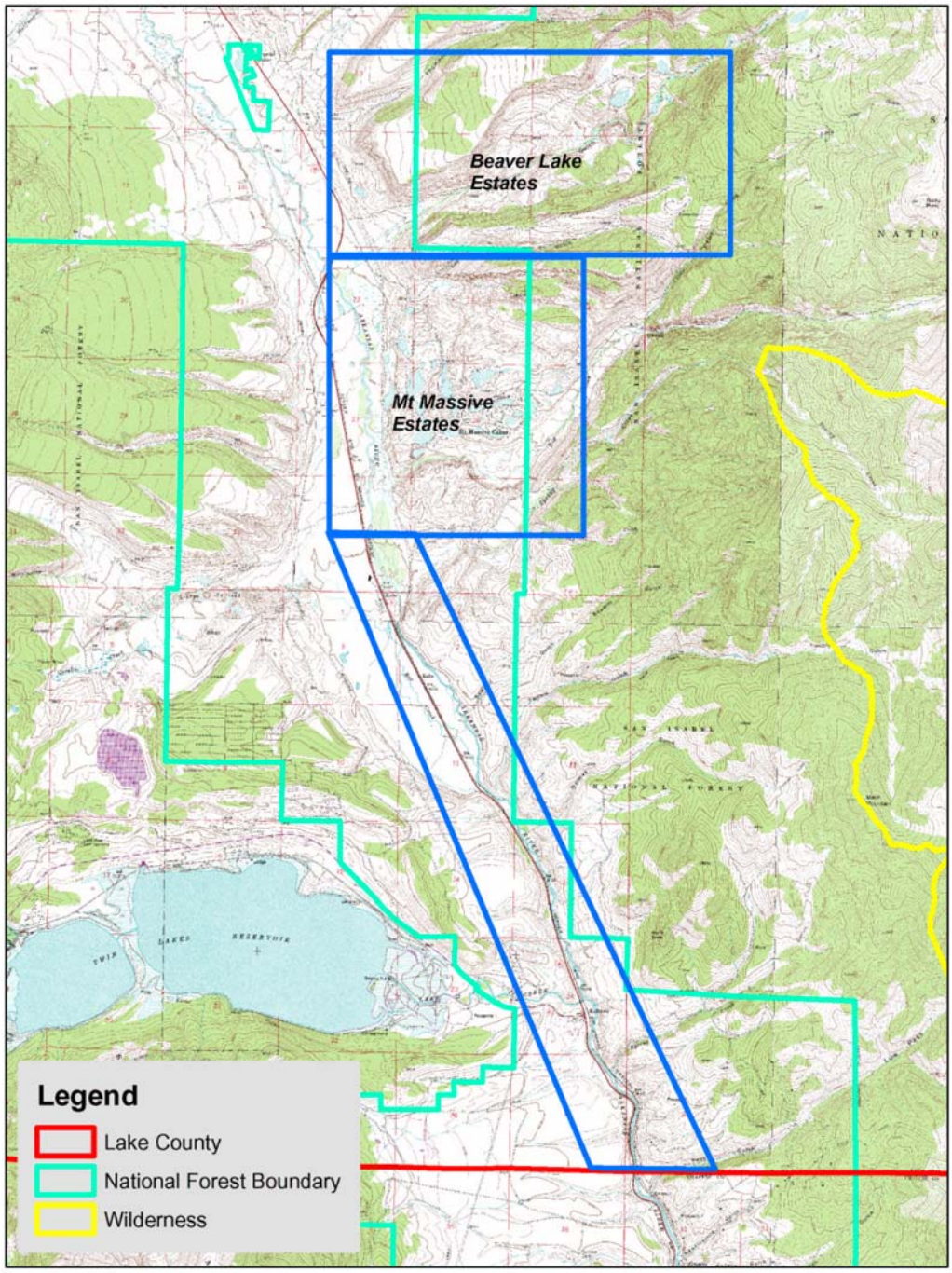
Southwest Leadville: Sugar Loafin' Campground, Mt. Massive Golf Course, High Mountain Institute, Individual homes, U S Fish Hatchery, Outward Bound, Elk Run Subdivision, Centennial Heights Subdivision

Map 2.5 - Southwest Leadville
(1:45,000)



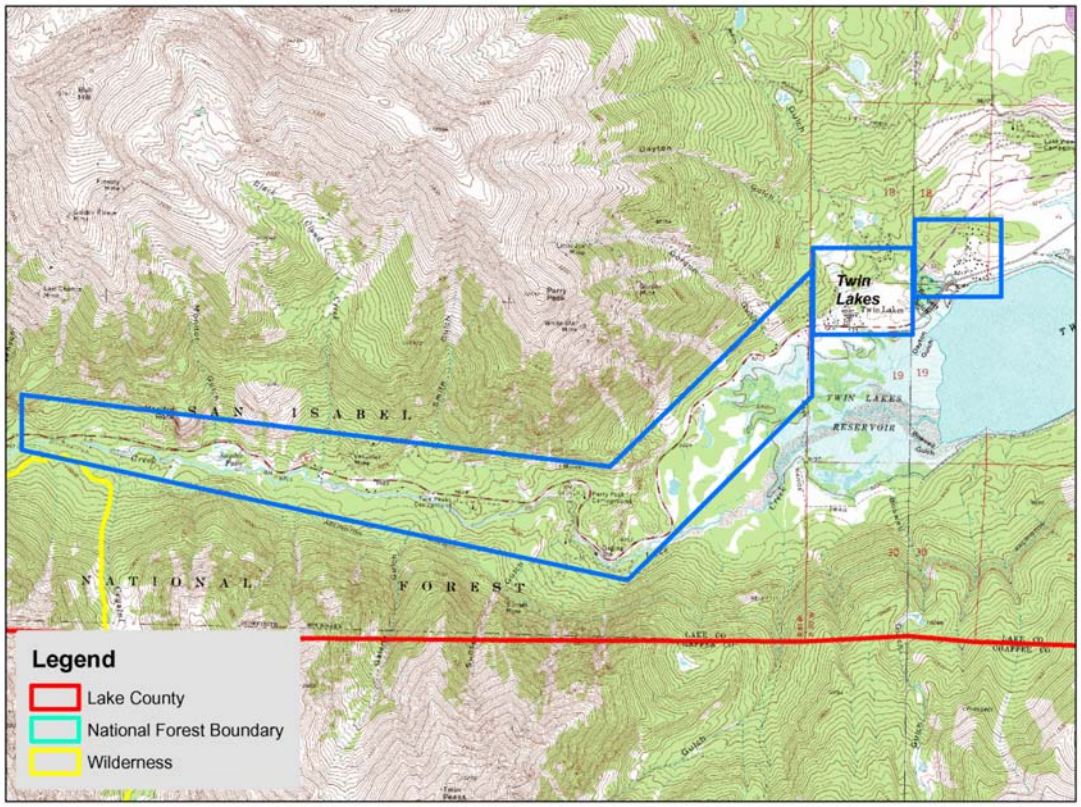
Hwy 24 South: Mt. Massive Estates, Beaver Lake Estates, Balltown, Individual homes located along Hwy 24 from County Road 7 to the Lake County Line, Rocky Acres

Map 2.6 - South
(1:75,000)



Hwy 82: Twin Lakes Village, Gordon Acres, Twin Lakes Cañon Estates, Individual homes located along Hwy 82

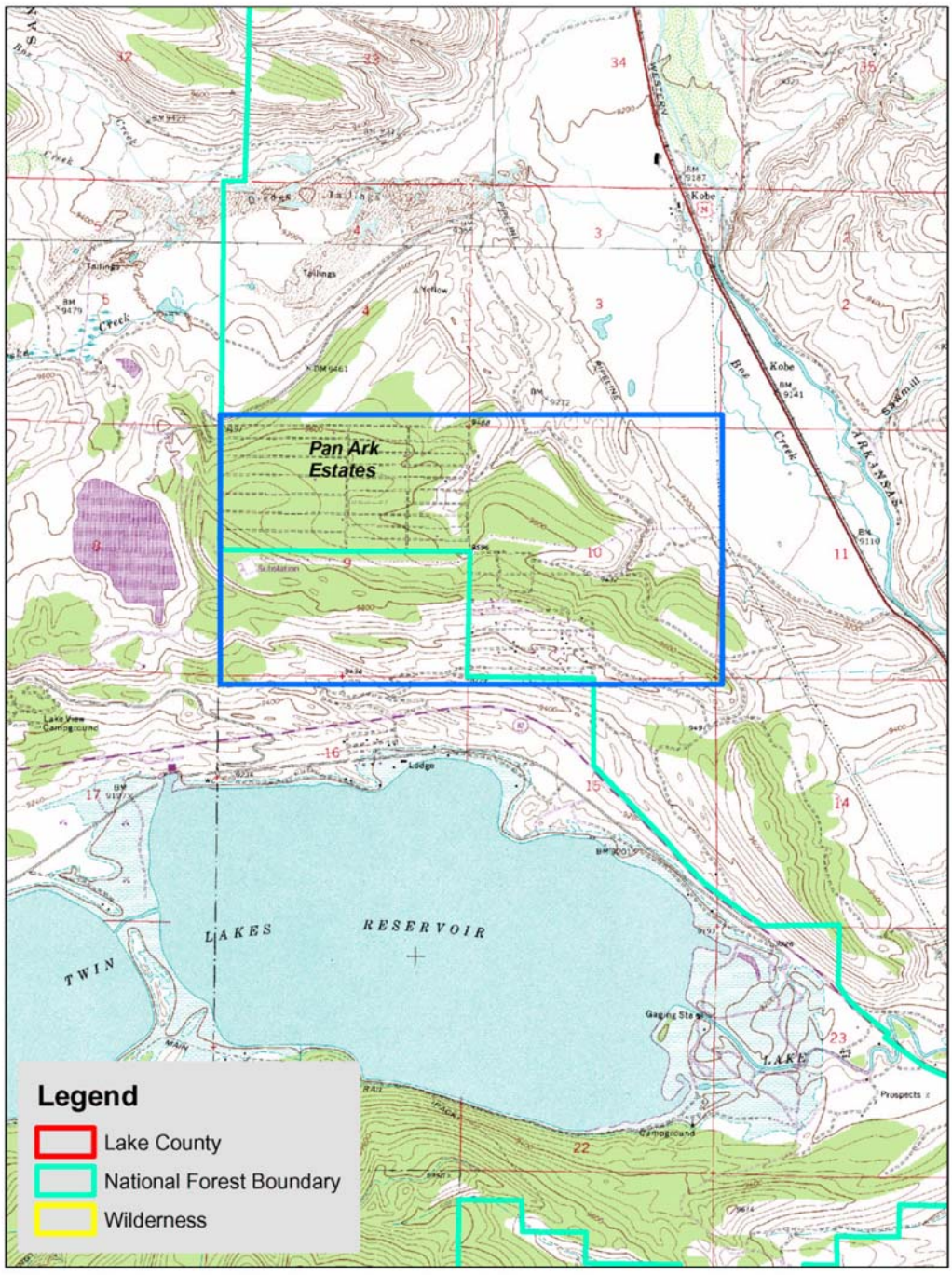
Map 2.7 - Hwy 82
(1:40,000)



PanArk:

- PanArk Estates (Mount Elbert Plamor)
- E. E. Hill Estates

Map 2.8 - Pan Ark
(1:35,000)



Chapter Three: Community Assessment

a. Fuel Type and Fire Regime (See also Appendix A):

Refer to Chapter 1. Lake County consists of multiple fire types that burn at different intervals and intensities (fire regime – see Chapter 1 for definition). All of the fuel types in Lake County have been affected by man to differing degrees. Grazing, fire suppression, lack of Native American burning and building communities have all affected the role fire plays in the ecosystem.

The following vegetation types all located within Lake County.

- Grass. It typically burns every 0 – 35 years as a low to moderate intensity surface fire.
- Sagebrush. It typically burns every 45 – 65 years as a moderate to high intensity surface fire.
- Ponderosa pine. It typically burns every 0 – 65 years as a low to moderate intensity surface fire. The predominate carrier of fire in ponderosa pine is grass and needle litter.
- Lodgepole pine. It typically burns every 100 – 300 years as a high intensity crown fire. Small fires (< 5 acres) that are low intensity occur between larger crown fires. The average age of the lodgepole pine forests near Leadville is 125 – 150 years.
- Spruce/fir. It typically burns in excess of 300 years as a high intensity crown fire.
- Tundra. Only burns under very extreme conditions. When it does burn, it is as a low intensity surface fire.

b. Risk of Ignition and Wildfire Occurrence (See also Appendix A)

Causes of wildfire include human and natural ignitions. Types of human ignitions include unattended or abandoned campfires, vehicle fires, cigarettes, arson fires, and sparks or arcs from power lines or transformers. The most typical natural ignition source in Lake County is lightning.

Lake County is at high risk from human caused fires. Federal lands within Lake County are used extensively by recreationists, including hikers, fisherman, hunters, party groups and Off-Highway Vehicle (OHV) users. Multiple, high voltage, power lines cross through the county. Highway 24 and 91 are heavily used in the summer months. An additional concern is areas north and west of the Leadville in city and county areas. These are areas where the Mineral Belt Trail, a number of existing and future housing developments, the Lake County School District facilities and are surrounded by dense post-mining lodgepole pine forests. Remediation work in these areas are needed to reduce the risk of any kind of fire transitioning from federal and county lands into the City of Leadville. In 2005, 6 human caused fires were reported and suppressed; two additional lightning fires were reported but were extinguished by rain prior to locating the fires.

c. Community Values at Risk

i. <u>Housing, Business, and Essential Infrastructure</u>

Lake County's housing profile consists primarily of single-family, detached dwellings. A number of these serve as vacation homes between which adequate spacing tends to prevent the propensity for fire to spread between buildings, provided that contiguous vegetation does not fill the space.

Housing profiles transition dramatically toward the city core. Along the edge of the town, and particularly within the city limits of Leadville, housing changes to primarily full-time residences, with spacing reduced to as little as five feet between buildings. In these areas, the propensity for fire spread greatly increases, with contiguous natural fuel beds becoming less of a factor.

This same pattern repeats itself with regard to the community's business; as expected, the greatest concentration of commercial property lies along the edges of town and occupies the central core of Leadville. Here too, spacing between buildings decreases toward the City, leading to an increased likelihood that fire will spread between buildings with greater efficiency.

These factors create a concern that a wildland-urban interface fire could burn from the forested areas surrounding the community, into the relatively open subdivisions, and from there to the dense neighborhoods and commercial areas. Such a fire would threaten numerous homes along with the area's commercial infrastructure, potentially destroying the tax-base which supports local government and the essential services it provides. This threat is of particular concern with regard to the historical landmarks comprising much of Leadville's and Lake County's tourism trade; a wildfire transitioning into to the city core would call into question the survivability of much of community's irreplaceable historic buildings.

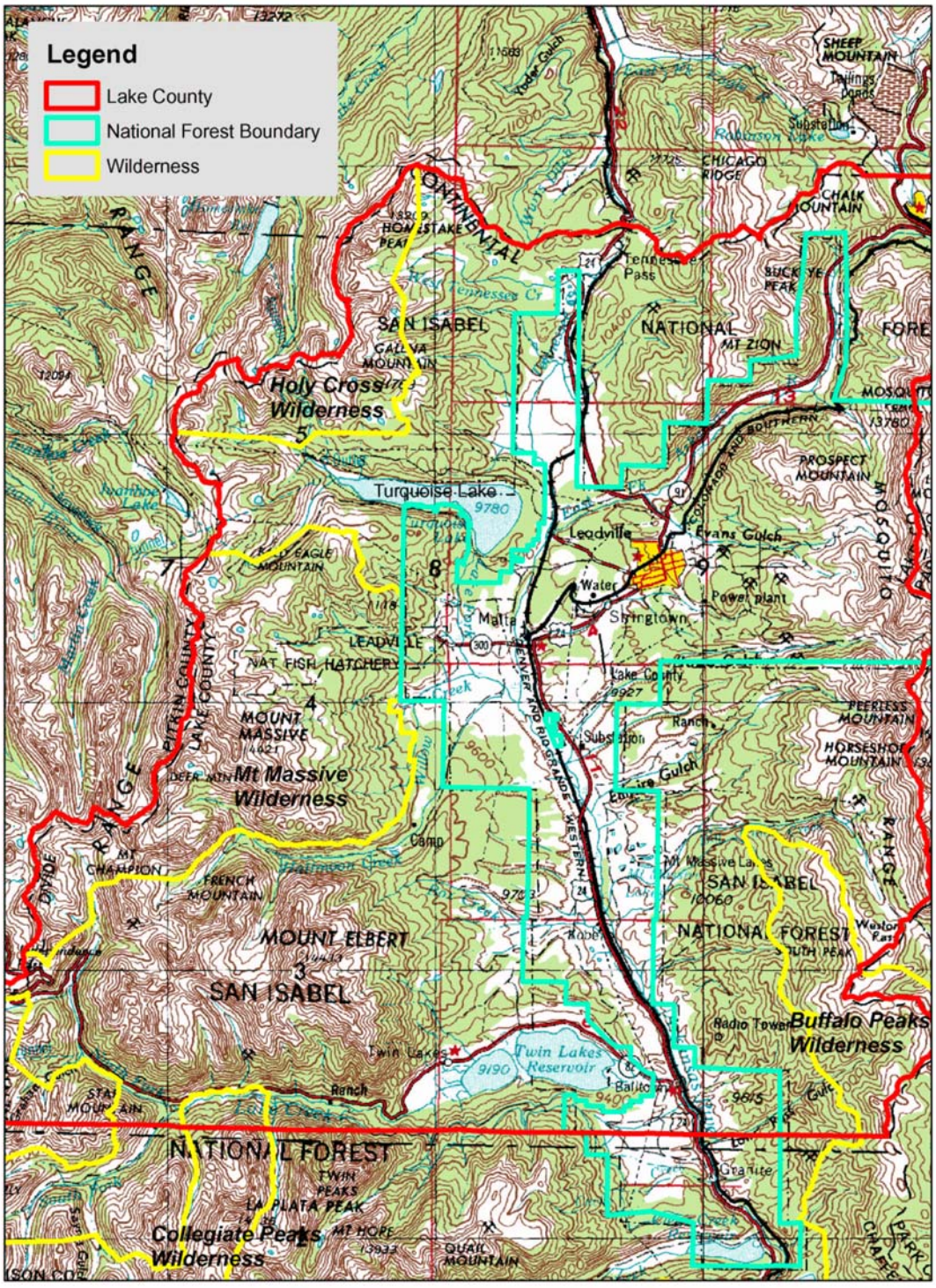
ii. Recreation Areas/Watersheds/Wildlife Habitat

Lake County contains many special use areas or areas of concerns. These areas include developed recreation sites, watersheds, wilderness areas and identified wildlife habitat (Map 3.1).

Examples include:

- Developed Recreation Sites
- Campgrounds at Turquoise Lake
- Picnic areas at the Leadville National Fish Hatchery
- Halfmoon Campground
- Campgrounds, picnic areas and docks at Twin Lakes
- Watersheds (also of interest to Aurora, Colorado Springs and Pueblo)
    - Turquoise Lake
    - Mt Elbert Forebay
    - Twin Lakes Reservoir
- Wilderness Areas
    - Holy Cross Wilderness
    - Mt Massive Wilderness
    - Collegiate Peaks Wilderness
    - Buffalo Peaks Wilderness
- Habitat for Sensitive Species
    - Greenback cutthroat trout – Leadville National Fish Hatchery
    - Lynx habitat – Forest Service

Map 3.1 Recreation Areas, Watersheds and Wilderness Areas in Lake County (1:190,000)



iii. Local Preparedness and Protection Capability

The Forest Service is responsible for wildland fire suppression efforts on all federal lands in Lake County; these lands include the Bureau of Land Management, U S Fish and Wildlife Service and US Forest Service lands. The closest Forest Service fire engine is located in Salida, Colorado; it is a Type 6 Engine with a minimum of two personnel and 250 gallon water capacity. Militia forces are available from the Leadville Ranger District, but may be unavailable since wildland fire suppression is a collateral duty and not there primary position.

Under the Annual Wildfire Operating Plan for Chaffee and Lake Counties, Leadville/Lake County Fire provides mutual aid assistance for wildland fire on federal lands.

Leadville Lake County Fire Rescue typically responds to reported wildfires with both a Type 6 and a Type I fire engine. Because the Department maintains a daily staff of 3 firefighters and 1 fire chief, it must split its crew to provide this response, or rely upon non-paid reserves for additional personnel. The ability to provide staffing levels above the on-duty crew remains largely unpredictable (See also Appendix A).

iv. Local Hazards and Issues

Lake County has many hazards within the county that may affect suppression efforts. Hazards within the community include:

- active and abandoned mining shafts;
- chemicals associated with the mining process, e.g. the Leadville Mine Drainage Tunnel, and illicit drug manufacturing;
- unexploded ordnance associated with the historic Camp Hale training site and more recent CIA training sites;
- Old/historic buildings that propagate fire.

Chapter Four: Collaborative Process in Lake County to Identify WUI Treatment Areas.

a. The Collaborative Process and Neighborhood Meetings

Photo courtesy of Frank Walker: Home Stake Trout Club CWPP Meeting

The initial process through the August 27th meeting leading to the neighborhood meetings has been described in Chapter 1, Section g.

At that meeting, discussions covered lodgepole pine ecology and fire behavior within the lodgepole forest, the increased chance of human caused ignition due to high recreational use of Lake County, local suppression capabilities, review of Lake County neighborhoods and plans for wildfire occurrence, and access to funding for private landowners desiring to protect their neighborhoods. Community members, in attendance, identified high risk zones in the county, based on the following parameters: Road access; fuel considerations; topography; potential for human-caused ignition; water supply; population density; and communications and notifications. The core team committed to visit with relevant home owner associations and neighborhoods to seek input from those residents regarding wildfire concerns, possible wildfire protection treatments and other related subjects.

At a meeting held on September 15th, the core team and taskforce discussed the outcomes of the workshop, and the need to visit the high risk areas bringing a condensed version of the workshop to the homeowners. The areas identified at the workshop as being at the highest risk of wildfire, including but not limited to: Home Stake Trout Club; Twin Lakes; Mountain View East; Beaver Lakes Estates; Piney Run; Homestake HOA; Elk Run; Ridgeview; Gem Valley; Gordon Acres; Turquoise Lake Estates; Sylvan Lakes; Panark; and E.E. Hill. Meetings with the homeowners were scheduled for September through November, with the last meeting occurring on November 12th. A second phase to the CWPP process is planned in order to reach out to those areas that were not incorporated into this plan.

Once it was decided what areas the core team would focus on, goals for the meetings were set. It was decided that the number one goal was to bring residents up-to-date on ecology, fire behavior, fire defense, and defining what a treatment is. The number two goal was to have the residents define: whether they wanted to participate in the CWPP process, what type of treatments were acceptable and where they should be located, their assessment of wildfire risk, long range plans to protect life and property from a wildfire, and to open lines of communication between each other and the Lake County community as a whole. In order to accomplish this task, maps were needed of the areas we were visiting, a survey to elicit personal responses from individuals, and extra reading material covering the CWPP process in more depth.

The meetings were most often held in someone's home which made it more convenient for the residents to get there. Meetings would range from two to six hours depending on the number of questions and the level of participation from the residents. Not every neighborhood listed above was visited due to time constraints and scheduling conflicts. The neighborhoods visited include: Home Stake Trout Club; Twin Lakes; Mountain View East; Beaver Lakes Estates; Piney Run; Homestake HOA; and Elk Run. The outcomes of those meetings are explained in the maps and narratives of the next section.

b. Outcomes of Collaborative Neighborhood Meetings: Maps and descriptions for each neighborhood as follows:

Beaver Lakes Estates

Beaver Lakes Estates is located approximately two miles east of the intersection of Highway 24 and County Road 7, the subdivision of Beaver Lake Estates occupies a narrow valley amid the western slopes of the Mosquito range, below Mounts Sheridan and Peerless.

The community has identified several action items to include in the CWPP, each of which aim to either decrease the likelihood of wildfire entering the community, or provide a place of safe haven should in the event that wildfire prevents timely relocation. These action items include:

Action Item Priority: (for Beaver Lakes priority 1) reduce the amount of sage brush on the west edge of the subdivision and maintain adequate clearance along the road leading into the subdivision.

This action item, which would occur on USFS land, would include mechanical treatments and prescribed burning.

Justification: Preventing a fast-moving wildfire from burning upslope into the subdivision and reducing the chances that fire will close the community's one year-round route of egress.

Action Item Priority: (for Beaver Lakes priority 2) develop two safety zones within the subdivision.

Because Beaver Lakes Estates has only one route of egress, developing safety zones within the subdivision itself will provide the community with places of safe refuge, in which they may safely wait for the passage of a wildfire.

The community selected the following sites for establishing safety zones:

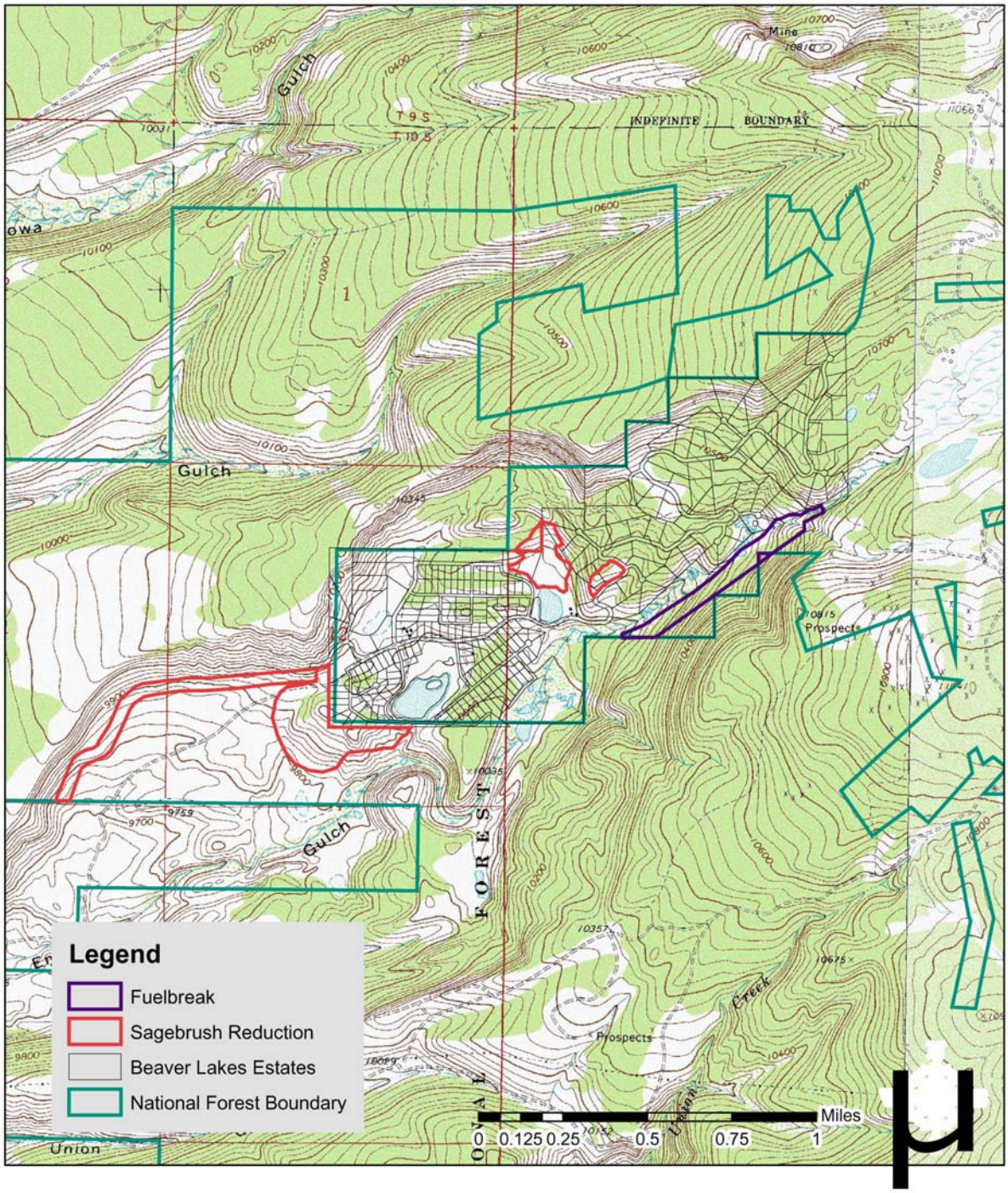
1. Tract C (see map). This will be the primary safety zone, constructed large enough to hold vehicles and people.
2. The area surrounding the rental cabins/manager's residence (see map). This will be the secondary safety zone, constructed large enough to hold people only.

Justification: Constructing a secondary route of egress remains cost-prohibitive. Developing safety zones within the subdivision provides areas of safe-haven during a wildfire.

Action Item Priority: (for Beaver Lakes priority 3): Thin lodgepole pine stands along the eastern edge of the subdivision.

Justification: By thinning the lodgepole pine stand along its eastern edge, the community intends to reduce the changes of wildfire entering the subdivision, particularly during a crown fire.

Map 4.1 Beaver Lakes Estates
(1:24,000)



Elk Run Subdivision

Located approximately three miles southwest of Leadville and can be accessed by heading west on CR 300 (fish hatchery road), then a left on CR 11 (Halfmoon Creek) and finally a following CR 11A to the "Y" and taking the southeast road.

These action items include:

Action Item: Address FireWise issues such as water source for fighting fire, defining safety zones, reflective signs, and ingress/egress issues. Residents' main priority is to focus on getting a stand pipe from Halfmoon Creek to Elk Run and explore other water storage options.

Justification: Have water on hand to supply engines fighting structure fires and wildfires.

Action Item: Elk Run borders the BLM to the South of the subdivision and support the ongoing thinning projects on BLM. Elk Run residents want the BLM to focus on selective, strategic patch cuts with less thinning between and start to burn off slash piles that are accumulating.

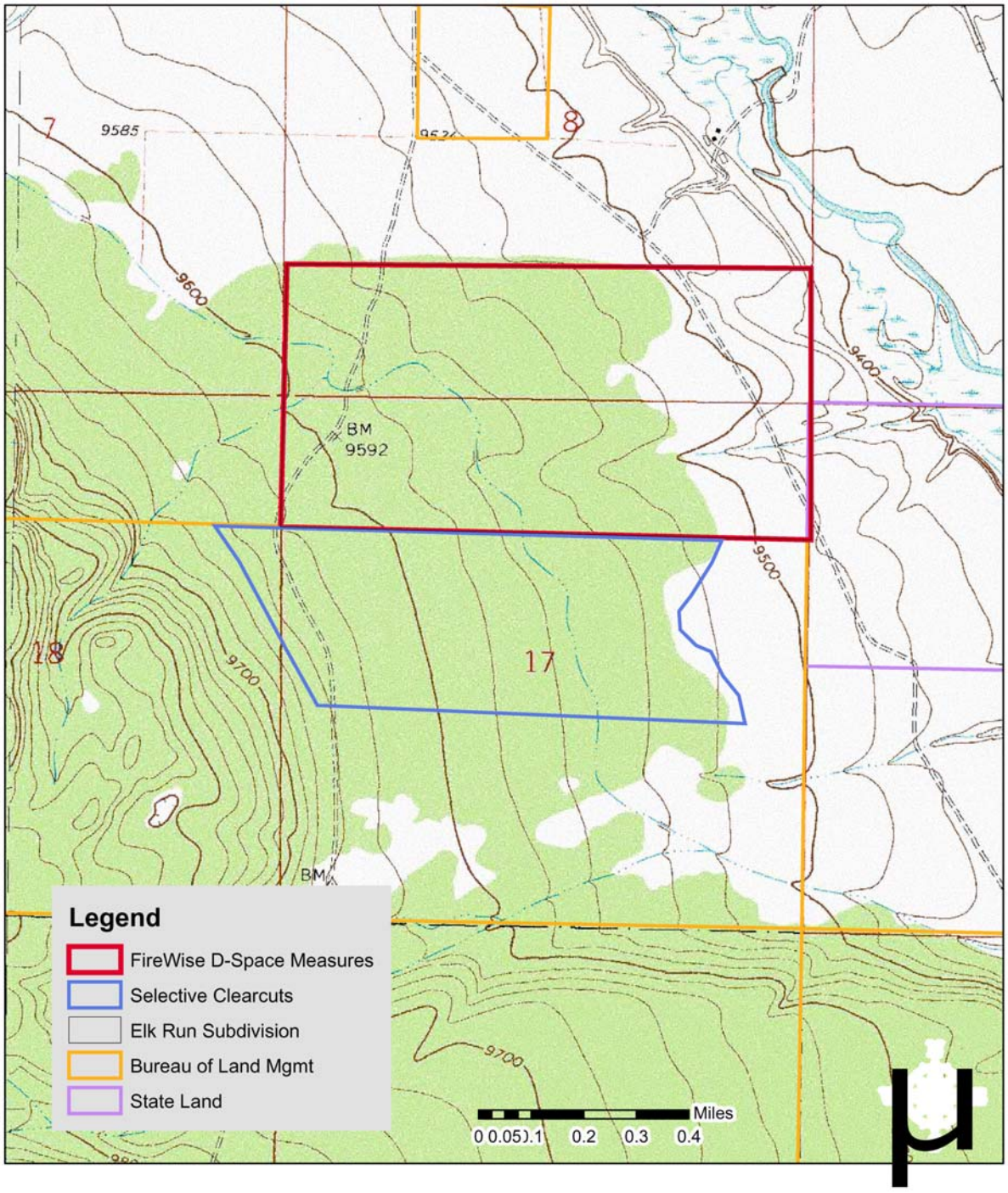
Justification: Residents would like to see strategically placed patch cuts to slow down any wildfire and less thinning between patch cuts, as well as the removal of the slash piles on neighboring property.

Action Item: Continue fuels thinning and defensible space on private property and create solution to slash buildup by supporting a chipping program. The residents also support the idea of a county chipping program and biomass utilization.

Justification: By continuing fire mitigation efforts on private property, the residents will increase their chances of survivability in the event of a wildfire.

Action Item: Elk Run has requested several road closures on BLM and USFS land once projects are finished. There are a number of roads that provide access to thinning projects that should be closed after projects have been completed.

Map 4.7 Elk Sun Subdivision
(1:15,000)



Home Stake Trout Club

This subdivision is accessed by heading north on US Highway 24 from Leadville. The community identified riparian and wetlands areas as no treatment zones and Little Porcupine Gulch as an active elk calving area where time restrictions should be established to protect the elk. The subdivision supports and encourages development of plans and methods that protect and enhance wildlife habitat values. The subdivision has a vested interest in the lakes and stream on their property and would like to see every precaution taken to reduce or prevent erosion and run off. Residents of Home Stake Trout Club (HSTC) requested that no old or older growth or spruce and fir be cut on HTSC and surrounding public lands. HSTC also requested that the equipment, means and methods utilized for timber extraction be of the type and kind that minimizes soil disturbance and erosion.

Action Item: Contact experts to recommend areas needing defensible space on private and federal lands without compromising the environment or aesthetics. Final decisions should be up to the individual homeowners. HSTC supported the concept of thinning and fuel break openings, provided they are consistent with the protection, enhancement and preservation of wildlife, riparian and other environmental related values. HTSC requested specifically that no treatments occur in Longs Gulch and other riparian areas to avoid lake and stream disruption and contamination from erosion.

Action Item: Add up to two additional dry fire hydrants.

Action Item: Target areas that still need slash and blow-down cleanup and prioritize those areas.

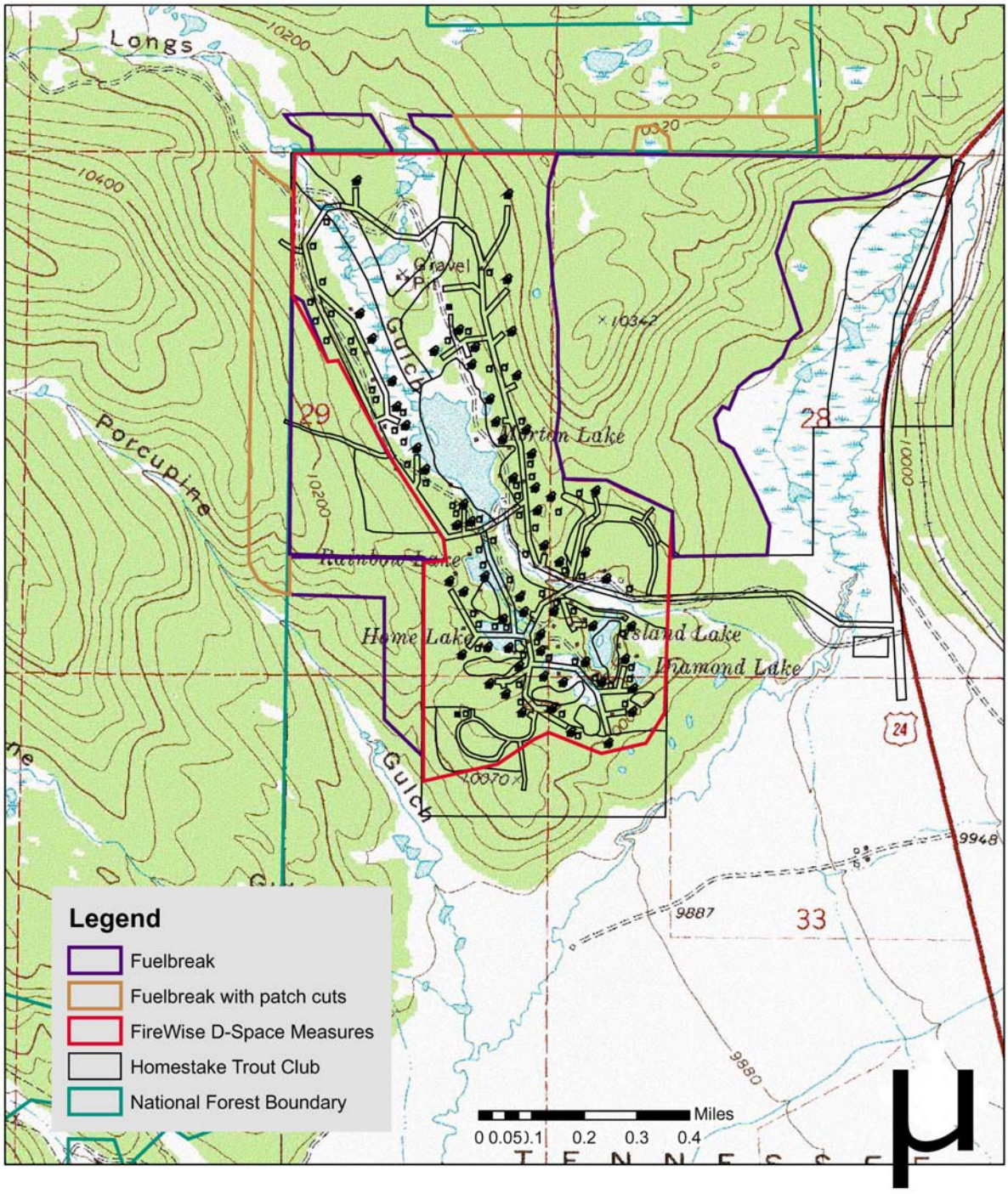
Action Item: Find grants or funding to help accomplish work needed

Justification: By reducing the fuel load around and within the subdivision, the community enhances its survivability should wildfire threaten the area.

Action Item: Need to investigate improvements of HSTC's roads and bridges to determine what needs to be fixed in order to support fire equipment. Look at other ingress/egress issues including additional exits and possible safety zones.

Justification: By addressing ingress/egress and safety zone issues, members of the community will be able to evacuate while allowing structure protection engines to come in.

Map 4.3 Homestake Trout Club
(1:15,000)



Homestake Subdivision

This subdivision is accessed by turning north on Motherlode Drive from Mountain View Drive. Paved roads provide good circulation throughout the community and fire hydrants provide fire suppression water supply. The community, however, has identified a couple areas posing the risk of wildfire either entering the subdivision from outside its boundaries or spreading from within. Principally, these include areas where lodgepole pine stands abut the community and undeveloped lots in which fuel reduction measures would lessen the spread of wildfire.

Action Item: Thin lodgepole pine stands along the northern and western boundaries. Provide a "fuel break" of between 50 and 100 feet along this boundary. This action item requires a partnership between the subdivision and the owner of the identified property.

Action Item: Limb coniferous trees in subdivision green belt and encourage Aspen growth.

Action Item: Reduce fuelloads in undeveloped lots within the subdivision.

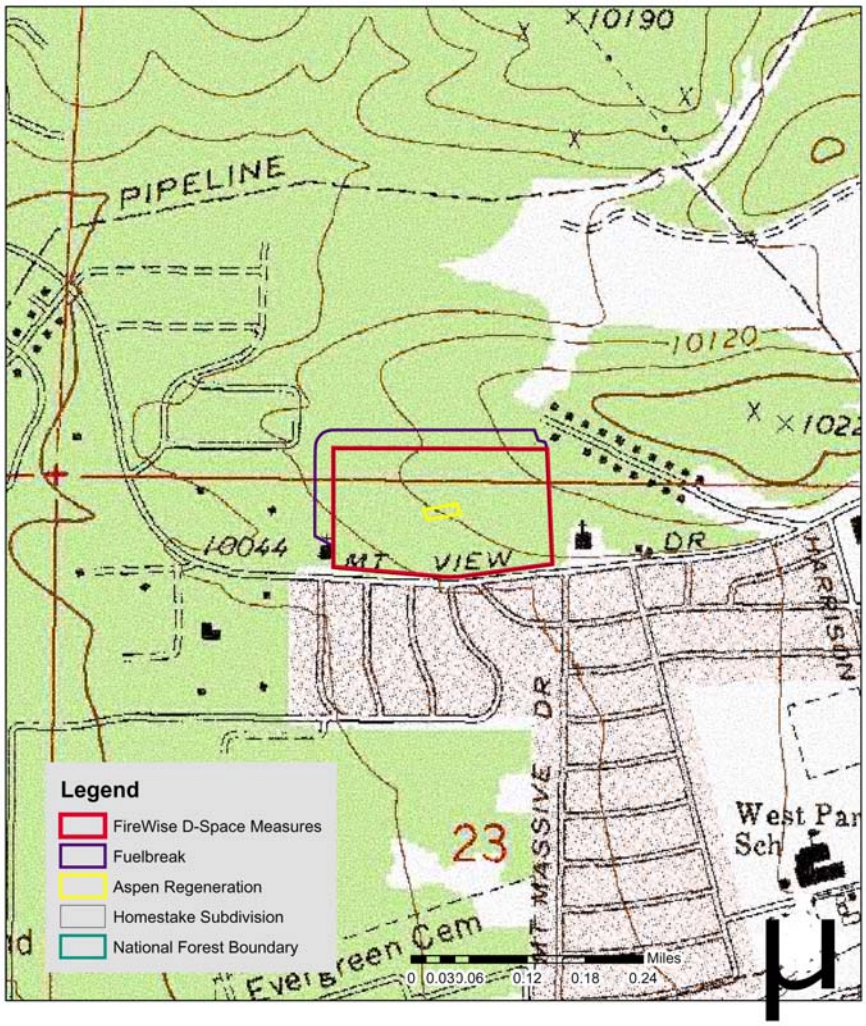
Action Item: Employ FireWise recommendations throughout subdivision.

Justification: By reducing the fuel load around and within the subdivision, the community enhances its survivability should wildfire threaten the area.

Action Item: A map is needed that shows the location of all structures – aerial photos from CSFS in the future may cover this need.

Action Item: A meeting is needed with the CWPP Taskforce, Homestake Subdivision representatives and John Clapper, whose property borders the subdivision.

Map 4.4 Homestake Subdivision
(1:7,000)



Mountain View East

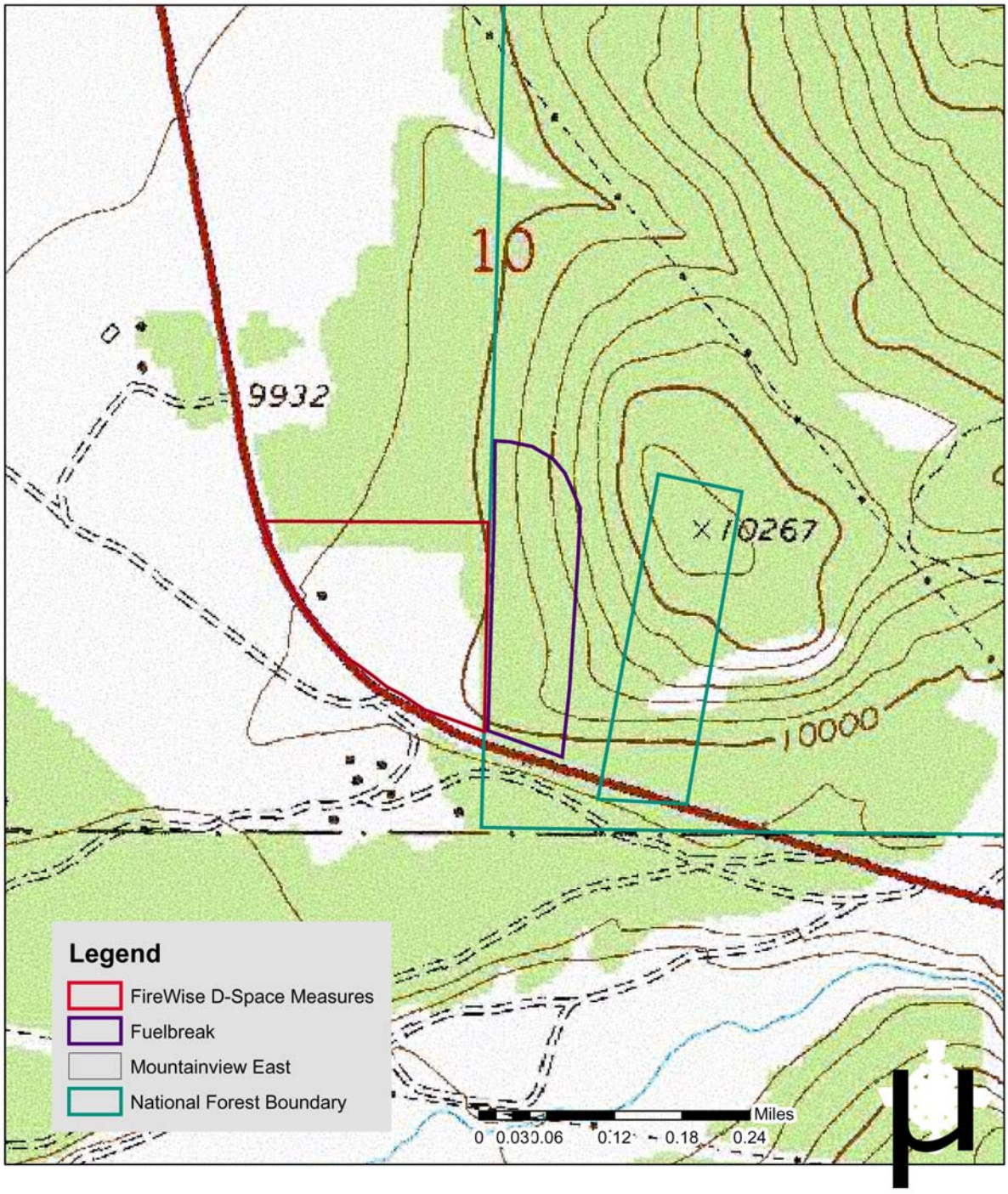
Located along Highway 24, approximately 1.5 miles northwest of the Leadville City Limit, Mountain View East consists of manufactured homes abutting National Forest land. Wildfire spreading into the subdivision from the lodgepole pine stands adjacent to the subdivision's eastern border constitutes the community's principal concern.

Action Item: apply appropriate treatments, primarily thinning, along the eastern edge of the subdivision.

Action Item: remove dead and dying trees, and limb trees in accordance with FireWise techniques within the subdivision.

Justification: By reducing the fuel load along its eastern edge, the community reduces the propensity for wildfire to transition from Forest land to private property. By employing FireWise techniques within the subdivision, the community enhances its survivability should wildfire threaten the area.

Map 4.5 Mountainview East
(1:7,000)



Piney Run Subdivision

This subdivision is accessed by heading north on US highway 24 from Leadville. Piney Run is located directly north of the Sylvan Lakes community. Residents are concerned that minimal fire suppression would occur next to their properties due to unexploded ordnances (UXO) and therefore support aggressive thinning to counter act this.

Action Item: Address FireWise issues such as water source for fighting fire, and request funding to secure some type of water storage or dry hydrant system.

Justification: Have water on hand to supply engines fighting structure fires and wildfires.

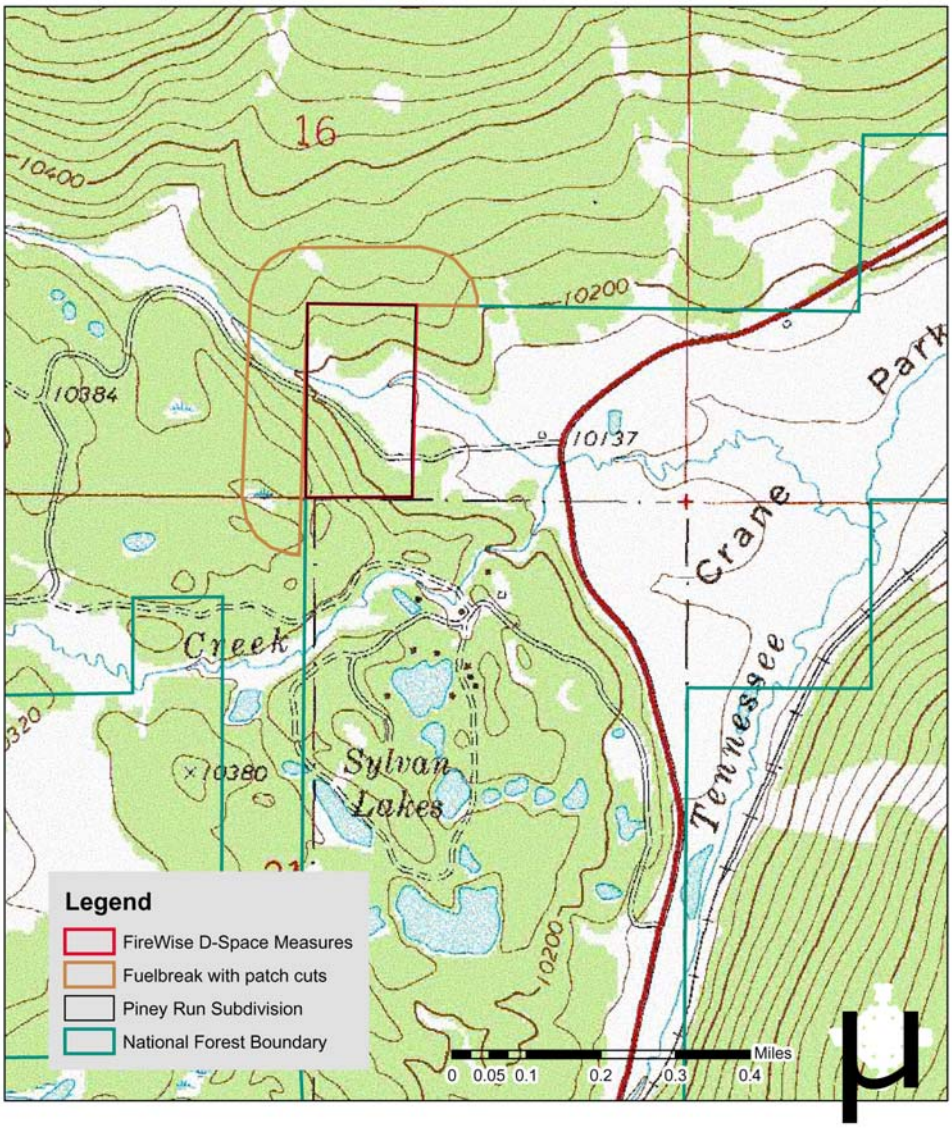
Action Item: Piney Run borders the USFS to the north and the west of the subdivision and support 1-5 acres patch cuts and aggressive thinning treatment. Piney Run residents want the USFS to create a fuelbreak that surrounds the community. The riparian zone around Crane Creek is home to elk, deer, beaver and other small animals. The residents have asked that no treatments take place in the meadows which provide the habitat.

Justification: An aggressive thinning approach ensures the residents of Piney Run a higher chance of survival in the event of a wildfire even without a high level of fire suppression response due to UXO's.

Action Item: On private property, residents will limb trees and reduce ladder fuels and ground fuels.

Justification: By reducing ladder and ground fuels the residents will decrease the chance of spreading ground fires and preventing crown fires on private property.

Map 4.2 Piney Run Subdivision
(1:10,000)



More Discussion Required before any Implementation

Town of Twin Lakes

Discussions with the Twin Lakes community were purely conceptual in nature, and any further action is understood to be subject to further community meetings. This town is located approximately 6 miles west of Balltown on Highway 82. The town was platted in the 1860's and occupies 30 acres with 113 lots. All of the road systems around the town are gravel and will support only one lane of traffic. The nearest pressurized hydrant is located east of town at the Mount Elbert Power Plant. In 1994 an Urban Wildfire Interface Plan was completed for the town. In the plan a wildfire hazard rating of HIGH was given to the town.

A meeting was held on November 5th at the school house in Twin Lakes to discuss the CWPP process. Input was gathered at the meeting from residents regarding locations for possible fuel treatments such as thinning of lodgepole pine, prescribed burning, or areas where no treatment was desired. It was determined that participants' recommendations were a starting point for further discussions and before implementation, further meetings would need to take place to gather more input from residents of Twin Lakes. Below is a list of action items participants at the November 5th meeting suggested for future consideration:

Topic 1: As a result of high tourist traffic, west of Twin Lakes along the highway 82 corridor was identified as an area of concern for high probability of ignition. To reduce the fire danger several thinning treatment areas of lodgepole pine were identified. The treatment areas would occur on USFS land.
Justification: By reducing the fuel load the fire danger will be decreased.

Topic 2: A small area of aspen west of town along the Highway 82 corridor was identified as no treatment.
Justification: Aspen can potentially be a good fuel break to reduce the spread of wildfire.

Topic 3: Northwest of town on USFS land an area of lodgepole pine was identified for thinning.
Justification: To reduce the threat of fire approaching the town.

Topic 4: Two prescribed burn treatments were identified. One is located near the west end of the lake on USFS land and the other is located northeast of town.
Justification: Improve forest health and decrease the threat of wildfire.

Topic 5: A thinning of lodgepole pine was identified northeast of town in the area of the White Star campground.

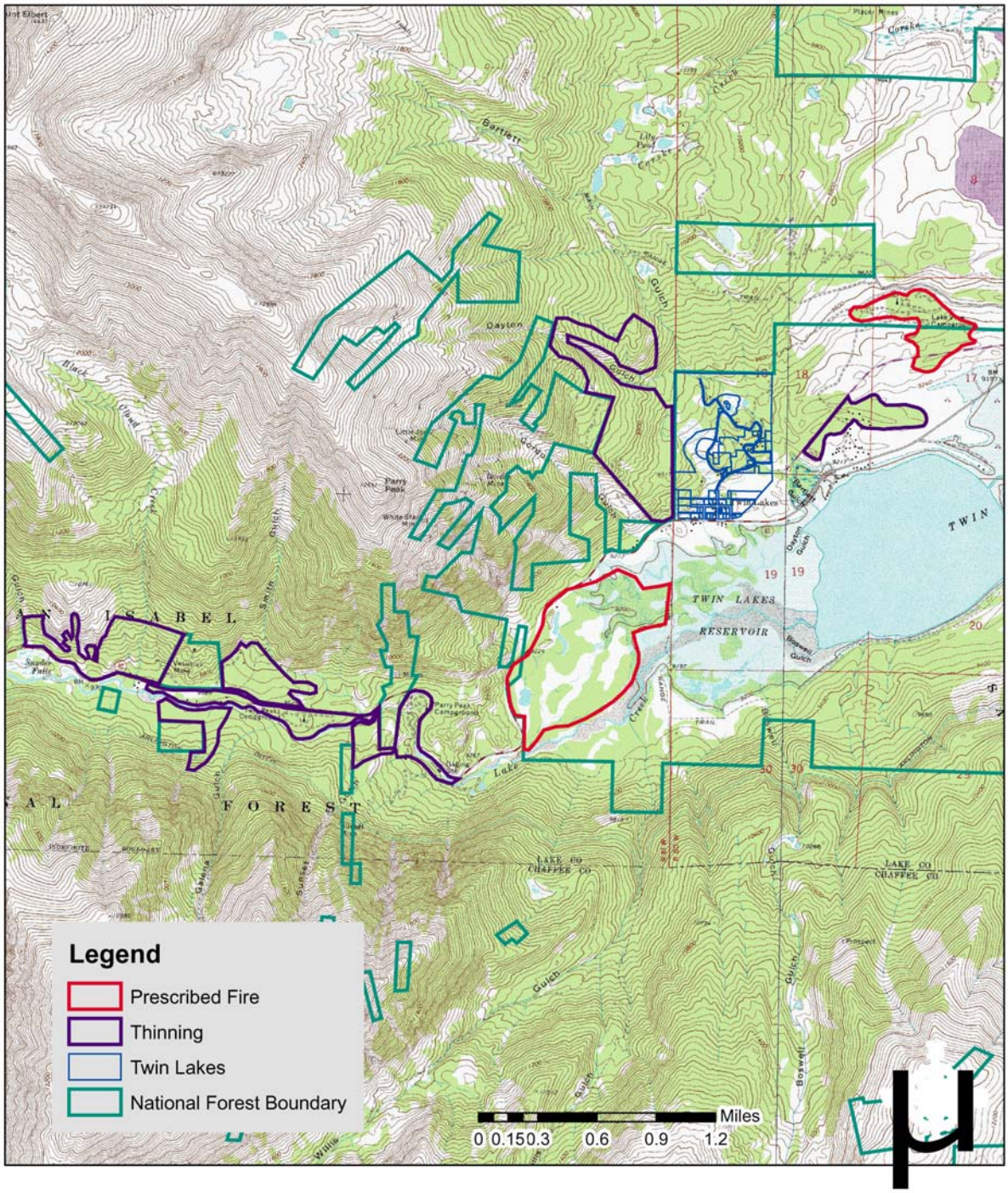
Justification: Campgrounds could potentially be an area of high probability of ignition. To reduce the threat of wildfire and increase forest health a thinning was recommended.

Topic 6: Five areas were identified for not treatment – these need to be identified in more detail in future meetings.

Topic 7: Dense grass areas near the town of Twin Lakes need to be considered for treatments to prevent grass fires endangering local structures.

Topic 8: Increased levels of Mountain Pine Beetle has been observed in areas North and West of Twin Lakes, consider treatments to reduce fire risk in these areas.

Map 4.6 Twin Lakes
(1:40,000)



Chapter Five: Next Steps

a. Requested Funding for Fiscal Year 2006/2007 and administrative oversight

In the fall of 2005, the CWPP Taskforce realized that the available funding would not be enough to cover the expenses needed to complete a thorough Lake County CWPP. The CWPP Taskforce, with the Natural Resources Management Institute at the Colorado Mountain College, has submitted a Wildland Urban Interface grant to the Colorado State Forest Service for $25.090. NRMI, along with other cooperating agencies, plan to match the amount with in-kind work. The funding will help finance a coordinator position which was filled previously by volunteer Jessica Clement. Approval of the request is still pending and should be announced early 2006. If funded, the grant will be administered by NRMI.

b. Effectiveness of Neighborhood Treatments

Completion of this CWPP will allow neighborhoods and private property owners to seek funding, with the CWPP Taskforce or any other group, or independently. The neighborhoods' preferred treatments were identified with two objectives :

1. to reduce the risk of ignition of any kind of fire, and reducing the risk of a surface fire evolving into a canopy fire and
2. to maximize defenses by increasing maneuverability around the property/neighborhood, increasing the chance for fire crews to change the direction of a fire and increasing the chances of safe evacuation for residents and their pets.

All residents have been informed that treatments of any kind may not guarantee the safety of a neighborhood. Once a full-fledged canopy fire has established itself, it has a high chance of being unstoppable and unmaneuvrable, even if thinnings and/or patchcuts have taken place. In order to ensure that the two treatment objectives of risk reduction and defense maximization can be met by the identified treatments, neighborhoods should consider increasing the effectiveness of their choices by consulting forest fire experts such as incident commanders, fire ecologists at universities or forest consultants, or other expertise on forest fire dynamics.

c. Priorities for Protection Capabilities and Reducing Structural Ignitability for Fiscal Year 2006/2007

The CWPP Taskforce plans to move forward with a second phase to the Lake County CWPP, depending on the allocation of funding. Learning from last year's process, the taskforce will continue to reach out to all neighborhoods within Lake County. Interest to be included in the second phase has already been expressed by the following communities: Area around the Leadville Mine Drainage Tunnel, West and North Leadville, Gem Valley, Pan Ark, Grand West, Sylvan Lakes, Turquoise Lake Estates, and Twin Lakes. All communities and private individuals are encouraged to participate, and will be approached when further funding becomes available.

d. Priorities for Promoting Community Involvement through Education, Information, and Outreach.

At the Public Review of this draft on January 21st, 2006 participants communicated their full support for the collaborative process that has been used in this effort so far. Participants testified to the key component of visiting with groups of residents in places at times most convenient to them, usually in their homes, or a facility very close by, on the weekend, as opposed to only relying on public hearings in Leadville. Participants also stressed that this willingness of the CWPP Taskforce to go to residents, combined with clear, sound scientific information and an opportunity to discuss all issues was additionally a key component. Without these two components, participants felt their questions and concerns might not have received the response needed to allow productive collaboration that allows trust to evolve among participants. The concepts of collaborative learning, full scientific disclosure and transparency were unanimously supported. In combination with neighborhood visits, participants encouraged future, continued use of all these concepts in Round 2.

Mike Gaylord, BLM, provided additional information regarding funding opportunities and invited the CWPP Taskforce to submit a letter of request to the BLM. There was a strong likelihood that funds would be available for continuing the CWPP process.

Additionally, the Colorado State Forest Service office in Salida can provide an array of forestry services to private landowners including:

- Forest Management Plans
- FireWise Workshops
- Insect and Disease Site Visits
- Wildfire Defensible Space Consultation
- Mountain Pine Beetle Inspections
- Timber Sale Layout and Administration
- Support for Local Fire Departments
- Tree Seedling Distribution and Survival Product
- Tree Planting Plans (including windbreaks) and Tree Planting
- Conservation Education
- Community Forestry
- Mitigation Services i.e. chipping, thinning, pile burning, small projects
- State Land Forest Management

<u>Other Action Items for consideration in Round 2, if funding becomes available, that resulted from the January 21st, 2006 meeting were:</u>

- Find out when annual home owner association meetings are held as possible venues for CWPP neighborhood meetings.
- Send information for inclusion in HOA newsletters, before their annual meetings.
- Do most active neighborhood meetings in the summer, when forest fire becomes a more salient issue to Lake County residents.

- Include the Division of Wildlife and other wildlife organizations such as Trout Unlimited, Rocky Mountain Elk Foundation, etc. in the CWPP Taskforce.
- Include a list of existing and future subdivisions and ratio of build-out as a reference in next CWPP.
- Send copies of CWPP to City and County Planning and Zoning Departments as a reference tool.
- In next version of the CWPP, fire suppression and water access in neighborhoods needs further discussion.

e. Monitoring Plan.

The CWPP Taskforce will be the monitoring team for projects associated with the CWPP. The Taskforce will serve to ensure that the CWPP remains current and includes additional neighborhoods or other areas as needed. Currently, the USFS is in the process of establishing a monitoring team for projects located on National Forest lands. The USFS monitoring team will be made up of individuals from the USFS, environmental groups, and local community members. The Colorado State Forest Service, Salida District will use the CWPP in annual work plans to determine where to focus attention and funding to complete forest management on private and state lands. The CWPP Taskforce will coordinate with the CSFS and the USFS monitoring team to ensure goals and objectives are met across property boundaries.

The CWPP Taskforce will schedule bi-annual meetings (March and September) to review the CWPP and to discuss and update the goals and objectives of current and/or future projects.

f. Planned Projects.

The following projects are currently being planned by the USFS, BLM and FWS. These projects are scheduled for implementation in 2006.

- Box Creek Vegetation and Travel Management Project. A portion of this project will thin stands of lodgepole pine adjacent to the Pan Ark, E.E. Hill, and Elk Run Subdivisions. BLM began implementing thinning projects adjacent to the Elk Run Subdivision in 2003.
- Northwest Leadville Hazardous Fuel Reduction Project. The purpose of the project is to create defensible space adjacent to Piney Run and Sylvan Lakes Subdivisions, Home Stake Trout Club, Mountain View East Trailer Park, Leadville National Fish Hatchery, and Outward Bound. This project is a cooperative effort between the USFS and FWS and CSFS and affected subdivisions.

DECLARATION OF AGREEMENT AND CONCURRENCE

The following partners in the development of this Community Wildfire Protection Plan have reviewed and do mutually agree or concur with its contents:

Agreement

_____ _____
Ken Olson, Chair, Board of Lake County Commissioners Date

_____ _____
Bud Elliott, Mayor, City of Leadville Date

_____ _____
Ed Holte, Lake County Sheriff Date

_____ _____
Jeff Foley, Emergency Manager Date

_____ _____
Karl Bauer, Chief, Leadville/Lake County Date
Fire Rescue Department

Concurrence

_____ _____
Damon Lange, Colorado State Forest Service Date

_____ _____
James E. Zornes, District Ranger Date
Leadville Ranger District, USDA Forest Service

_____ _____
Roy Masinton, Royal Gorge Field Office Date
Bureau of Land Management

_____ _____
Ed Stege, Leadville National Fish Hatchery Date
US Fish and Wildlife Service

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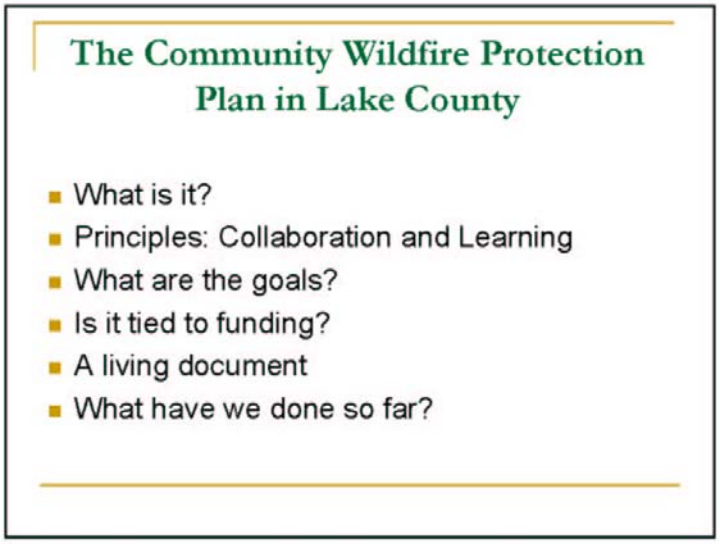
Appendix A: Lodgepole Pine Ecology, Lake County Fire Regimes and Fire Defense Issues: Presentation provided to neighborhoods and public meetings.

This appendix contains the entire 66 slide presentation made to the neighborhoods for CWPP deliberations in Fall 2005. The first part was compiled by Jessica Clement, as a result of a meeting that was held in May 2004. This meeting was attended by university, land management and non-profit organization forest ecologists and managers to discuss more recent scientific evidence regarding lodgepole pine stand dynamics. The green "Reviewers" notes on these slides are the result of a second review of this scientific evidence by additional academic and USFS forest ecologists and managers. The second part was compiled by Lisa Corbin, Fuels Specialist with the USDA Forest Service Leadville Ranger District and the third part by Leadville and Lake County Fire Rescue Department Chief Karl Bauer.



Lodgepole Pine Ecology Stand development, stand conditions, and fire ecology

Key Points of Forum held in Leadville, May 28, 2004.

Comments from forest ecologists and forest managers from University of Wyoming, Colorado State University and University of Colorado, USDA Forest Service and USDI Bureau of Land Management.

Compiled by Jessica Clement, Colorado State University.

Notes

- The focus of this forum was to review general, lodgepole pine stand ecological knowledge e.g. stand development, historical range of variation and fire behavior, on a large scale.
- Some of the following is based on relatively new scientific evidence using new methodologies, technologies, and larger temporal and spatial scales, and may conflict with previous findings.

Scale:

- Course Scale: Wyoming and Colorado. Variations within this scale may exist.

Notes

- This information provides general ecological information as a possible starting-off point when reviewing your forest conditions. It cannot determine whether treatments in your area are justified, for restoration, WUI or any other purpose. This information is only going to be helpful in combination with:
  - knowledge of local ecological forest conditions and
  - knowledge of community/ collaborative goals. Treatment goals can be related to restoration and/or aesthetics, recreation, wildlife, property protection, etc.

Definitions

- Stand: a group of forest trees of sufficiently uniform species composition, age, and condition to be considered a homogeneous unit for management purposes.
- Historical Range of Variation (HRV): The spatial and temporal variation in composition, structure, function and dynamics experienced in an ecosystem during a period when European-American influences were minimal.

Lodgepole Pine Fire Ecology

1. Lodgepole is not shaped by low intensity, surface fires as in southwest Ponderosa Pine forests.

2. Stand replacing fires have the greatest influence on stand and landscape structure in lodgepole pine forests in Colorado and Wyoming.

Reviewers:

Surface fire on a smaller scale may occur and its role in shaping lodgepole forests in Co. and Wy. needs more investigation: one size may fit most frequently occurring (modal) conditions, but perhaps not all.

Lodgepole Pine Fire Ecology

3. Early scientific literature suggested that low severity surface fires were also important in Lodgepole Pine forests however recent, more methodologically rigorous studies of sufficiently broad spatial scales have found evidence that low severity surface fires were only a minor component.
4. Low intensity surface fires did occur but evidence suggests they did not cover large areas and did not thin the forest.

Reviewers:

a. "Minor" component might have major ecological, biodiversity importance and b. what about the role of surface fires in mixed stands e.g. LPP/aspen or LPP/subalpine? Thinning might be more prevalent.

Lodgepole Pine Fire Ecology

5. Lodgepole pine can exist as a component of a mixed stand where its fire behavior may be different.

6. Forest management policies over the past 40 years have created lodgepole landscapes characterized by smaller patches and greater fragmentation than would have been seen under natural conditions. Very large patches are expected under historical stand-replacing fire regime.

Reviewers:

In LPP there seems to be room for more investigation. May be very different between Co. (more suburban fragmentation?) and Wy.

Lodgepole Pine Fire Ecology

7. It is not possible to exclude fire from lodgepole pine forests. Or: No matter how often suppressed, eventually a stand-replacing fire will happen.

8. The ecologically most important fires in Lodgepole pine forests occur under dry windy conditions when the fires burn with high intensity and are essentially uncontrollable, regardless of fuel condition or stand structure.

See reviewers' notes re. "ecologically most important fires" and next slide.

Lodgepole Pine Fire Ecology

9. These high intensity fires in lodgepole pine under dry windy conditions cannot be suppressed. Like hurricanes and tornadoes these natural events cannot be stopped.

Reviewers: General agreement that on a large temporal and spatial scale stand-replacing events will happen and cannot be stopped. But: locally, fire behavior can change naturally, due to wind direction/speed and fire physics changes, and by human intervention. These smaller, unburned/less severely burned areas may be ecologically important.

Lodgepole Pine Fire Ecology

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Lodgepole Pine Fire Ecology

10. Fire is not a threat to the long term sustainability of the forest ecosystem. Lodgepole pine can withstand differing fire intensities and severities.

11. Under less extreme weather conditions, mid age, approx. 80-200 year old, lodgepole pine stands are less prone to severe fire. Stands that are more prone are those with ladder fuels such as older stands, stands with dwarf mistletoe and some thinned forests with regeneration and/or activity fuels.

Lodgepole Pine Stand Conditions

1. Dense lodgepole stands are within HRV and are natural.

2. The open savannah-like stands that we associate with southwestern ponderosa pine forests are rare in lodgepole pine forests.

3. Lodgepole forests under a natural fire regime are highly variable in density – depending on serotiny, fire severity, site and time since fire.

Lodgepole Pine Fire Ecology

12. Under extreme weather conditions, stand structure makes little difference with respect to fire spread and severity. Most of the areas will burn under these conditions.

13. The techniques available to protect homes and lives in the face of a high intensity lodgepole pine fire should include the Firewise program and creating defensible space.

Lodgepole Pine Stand Conditions

4. Thinning would create stand structures that are approximately within HRV, but extensive thinning would create a landscape structure that was unprecedented.

Reviewers: Depends on scale – most agree that thinning on a smaller scale could be within HRV.

5. Thinning is not needed to restore to HRV but individual stands could be thinned and still resemble HRV at the stand level.

Lodgepole Pine Stand Conditions

13. Unplanned consequences of thinning may include:

- Blowdown
- invasive species
- drier and more surface fuels
- increase in herbaceous species
- increased tree regeneration, leading to ladder fuels
- decline of shade tolerant species, e.g. orchids,
- and may generate conditions outside HRV

Reviewers:

- Another unintended consequence of thinning LPP could be increased infestations of dwarf-mistletoe.

Lodgepole Pine Stand Conditions

12. Planned consequences of thinning in lodgepole pine stands may include, depending on management objectives:

- Increased herbaceous production but soils and light deficiency may reduce this effect.
- May reduce the possibility of crown fire and the intensity of crown fire under less extreme conditions.
- Remnant trees will likely increase in height and diameter due to lack of competition.
- Decrease susceptibility to mountain pine beetle.

Reviewers: Add "thinned LPP tend not to self prune and have larger crowns."

Lodgepole Pine Stand Conditions

Dwarf Mistletoe is part of the ecosystem but:

- Although dwarf mistletoe is native, its historical extent is not known.
- Historically a landscape would have included a mosaic of infected and uninfected patches but the extent of infection is unclear.
- Harvest and leaving infected residuals is well-known to artificially increase mistletoe.
- Stand-replacing fires tends to sanitize stands, regeneration tends to be free of mistletoe.

Lodgepole Pine Stand Conditions

Mountain Pine Beetle is a native insect and is an important component of disturbance regime in lodgepole forests and:

- MPB has always been part of the landscape but historical extent and severity of outbreaks is not well understood. Large outbreaks were probably likely given the fire regime for lodgepole pine forests.
- MPB was not an important factor above 10,000 feet but is becom more important in the future due to changes in climate.

Reviewers: MPB now affecting lodgepole pine stands above 10,000 feet.

Ecologically Compatible Approaches to Treatments

Vegetation treatments that mimic the effects of natural disturbances will be most ecologically compatible. To the extent possible, reconstruction of pre-settlement structure, composition and disturbance dynamics will aid in finding the most ecologically compatible approach for treatments.

- The Empiricist Reviewer say: Forests are robust and can handle some ecological "incompatible" treatments, up to a point. Still, a good philosophy.

Ecologically Compatible Approaches

Reviewers: Depending on Objectives

1. Variable retention harvest – clumps of live and dead trees, large wood on the ground.
2. Aggregate cutting units rather than dispersing them throughout the landscape.
3. Consider prescribed burning within treatment units and allow burning to kill some remnant trees.

Ecologically Compatible Approaches: Possible Examples

5. It may be possible to influence fire spread and intensity through strategic placement of vegetation treatment units. The most effective approach is to concentrate these near structures.

6. Consider allowing wildland fire use.

Thinning – can be various densities

Thinning: May help us redirect fire, keep it to the surface, or even put it out – only under mixed severity or low severity conditions. In extremely severe conditions, there's little chance of manipulating fire at all.

Aspen, Grasses, Defensible Space!

Contributions

Participants at this scientific discourse were:
Greg Aplet, William Baker, Dan Binkley, Jan Burke, Frank Cross, Laurie Huckaby, Merrill Kaufmann, Dominic Kulakowski, Roy Mask, Claudia Regan, William Romme, David Shadis, Jim Worral, Jim Zornes. Organized and facilitated by Jessica Clement.

With thanks to:
Colorado Mountain College in Leadville, the Natural Resource Management Institute, the USDA Forest Service Leadville Ranger District, and the Lake County Forest Project Steering Committee.

With financial support from:
a USDA Forest Service Rural Community Assistance Grant.

Fire Regimes: How often do fires occur & how intense can they be?

Lisa Corbin

USDA Forest Service

Grass Fire

- Typically burns every 0 – 35 years.
- Typically burns as a low to moderate intensity surface fire.
- Man has influenced fire in grass through:
  - Grazing
  - Lack of Fire (Human)
  - Fire Suppression
  - Building Communities

Sagebrush Fire

- Typically burns every 0 – 50 years.
- Typically burns as a moderate to high intensity crown fire.
- Man has influenced fire in sagebrush through:
  - Grazing
  - Lack of Fire (Human)
  - Fire Suppression
  - Building Communities

Ponderosa Pine Fire

- Typically burns every 0 – 35 years.
- Typically burns as a low to moderate intensity surface fire.
- The predominate carrier of fire in ponderosa pine is grass and needle litter.
- Man's influence in this vegetation type is similar to the grass type.

Lodgepole Pine

- Typically burns every 100 – 300 years.
- The average age of lodgepole pine forests near Leadville is approximately 125 – 150 years.
- 95 – 98% of fires will be single tree or small fires (low number of acres burned).
- The remaining 2 – 5% will be a crown fire (high number of acres burned).

Crown Fire in Trees - Examples

Suppression Capabilities

Suppression Capabilities - Local

- Leadville Lake County Fire Department – Brush Engine and Structure Engine.
- Forest Service Brush Engine – Located in Salida (E-261).
- Militia Forces available from Forest Service – Leadville Ranger District.
  - These are district personnel that are "Red Carded" (qualified to fight fire) but do not do fire as a primary position.

Suppression Capabilities – Large Fire Incident

- Within 2 to 4 hours:
  - Air tankers, helicopters
  - Handcrews
  - Additional Fire Engines from surrounding area (Forest Service, Bureau of Land Management, Fish and Wildlife Service, local County Fire Departments)
- Within 12 to 24 hours:
  - Overhead Team to manage the fire
  - Additional resources such as airtankers, handcrews, fire engines and support personnel

What firefighters can't do.

- Firefighters cannot stop a crown fire.
  - Changes in weather typically stop crown fires.
    - Types of changes in weather include:
      - Reduced winds
      - Large snow or rain storm
  - Changes in vegetation types may slow fire spread.
    - Fires moving from timber to grass, brush or tundra.

What firefighters can do.

- Firefighters can stop small fires and fires that remain on the surface.
- Firefighters can mitigate the effects a wildfire has on a community through thinning and prescribed burning treatments.
- Thinning and prescribed fires may help firefighters re-direct a large wildfire in lodgepole pine.

Wildfire Causes

Wildfire Causes

- **Human causes:**
  - Accidental: campfires, vehicle fires, cigarettes
  - Intentional: arson fires
  - Other: power lines, transformers
- **Natural causes:**
  - Lightning
  - Volcanic activity
  - Coal seam fires

Wildfire Consequences

- What happens when they burn?
  - About 95% of all wildfires remain small or are suppressed prior to becoming consequential.
  - *However…*

Wildfire Consequences

Given the right conditions of fuel, weather and topography, small wildfires will quickly grow into large ones that pose serious consequences for people, communities, the forest and surrounding areas.

These consequences include:

Wildfire Consequences

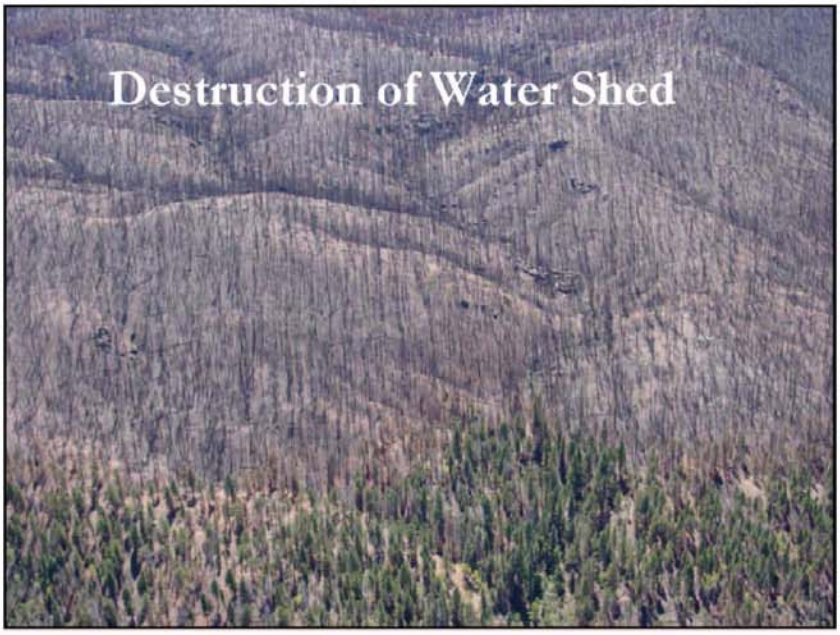
Large Suppression Costs

Wildfire Consequences

- **Paradise Fire**
  - Firefighters Assigned at Peak: 2,222
  - Estimated Suppression Cost: $13,000,000
- **Cedar Fire**
  - Firefighters assigned at Peak: 4,275
  - Estimated Suppression Cost: $29,880,826
- **Rodeo-Chediski Fire**
  - Firefighters assigned at Peak: 6,000
  - Estimate Suppression Cost: $43.1 M

Wildfire Consequences

Loss of View Shed



Wildfire Consequences

Uncontrollable Fire Behavior

Wildfire Consequences

Disruption of Personal Lives

Wildfire Consequences

Danger to Suppression Forces

Wildfire Consequences

- Paradise Fire
  - Total Acres: 56,700
- Cedar Fire
  - Total Acres: 273,246
- Hayman Fire
  - Total Acres: 138,000
- Rodeo-Chediski Fire
  - Total Acres: 467,066

Wildfire Consequences

Loss of Wildlife

Wildfire Consequences

Loss of Valuable Tax Base

<u>Commercial Structures Destroyed</u>
Paradise Fire: 2
Cedar Fire: 22

<u>Other Structures Destroyed</u>
Paradise Fire: 192
Cedar Fire: 566

Wildfire Consequences

Destruction of Personal Property

<u>Homes Destroyed</u>
Paradise Fire: 221
Hayman Fire: 132
Rodeo-Chediski Fire:426
Cedar Fire: 2,232

Wildfire Consequences

Deadly Fire Conditions

<u>Lives Lost:</u>
Paradise Fire: 2
Cedar Fire: 14
Oakland Hills Fire: 25

Learning and Planning are the Keys to Success to Living with Wildfire!

Questions/Comments?

Appendix B. A History of Fire in the Leadville Ranger District (provided by USFS)